

**STEPS TO SAVE
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FEATURES

128 **DYNO TEST TRINITY COBALT**

Trinity's loses the "D" and gets an "A" for performance with its latest mod-tech breakthrough.

>> BY STEVE POND

136 **DIGITAL SERVO GUIDE**

Steering isn't swingin'? Throttle needs more throw? A digital servo should be your next upgrade. You'll find all the choices here!

>> BY THE RC CAR ACTION TEAM

148 **HOW TO SOLVE THE 10 MOST COMMON NITRO PROBLEMS**

Break out your sidelined nitro ride because we're gonna get it running again.

>> BY STEVE POND

158 **2005 READERS' CHOICE AWARDS**

You made the call! The top picks for car, truck, fuel, engine, motor, battery and more as chosen by you.

>> BY THE RC CAR ACTION TEAM

182 **19TH ANNUAL PRO-LINE CACTUS CLASSIC**

Young guns win the big RC shootout in Arizona (and we don't mean Emilio Estevez).

>> BY GEORGE M. GONZALEZ

198 **JOEL'S BENCH HOW TO PACK AND PREPARE FOR A BIG "AWAY" RACE**

Ready for the big time? Here's how to get there in style and ready to win.

>> BY JOEL JOHNSON

208 **HOW TO REVIVE A GUMMED-UP ENGINE**

Next time, clean your engine before you put it away. But since you didn't, your first step is to read this article.

>> BY LITO REYES

COVER STARS: Team Losi's JRX-S features a radically new design and woven-graphite chassis. The Trinity Cobalt mod is the cool-running successor to the venerable D Series. Shots by Pete Hall



128



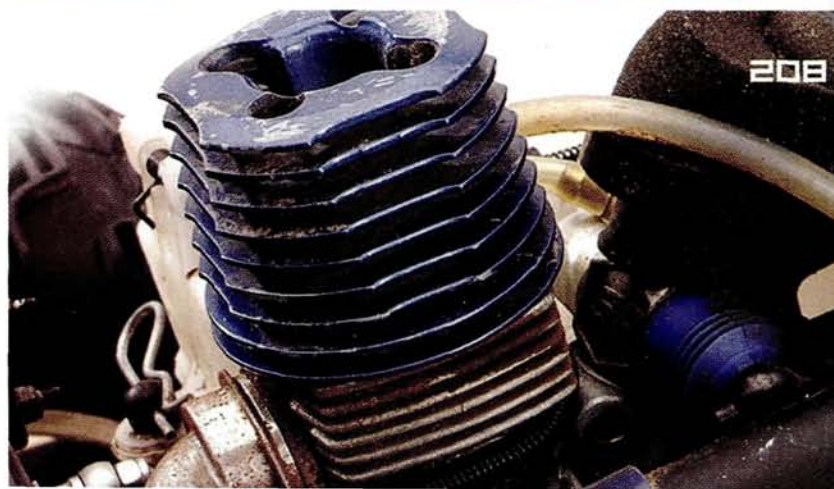
136



158



182



208

TRACK TESTS

78 **ULTIMATE TEST: TEAM LOSI JRX-S**

A pro touring car with an all-new, radical design
» BY MATT HIGGINS

92 **DURATRAX EVADER ST PRO & BX PRO**

DuraTrax's off-roaders go Pro » BY MATT HIGGINS

104 **MRC ACADEMY SB PRO CARBON**

Academy's popular sport buggy goes Pro with a full-graphite makeover » BY NICK MALATO

116 **OFNA ULTRA MBX COMP**

OFNA brings electric starting to buggies
» BY GEORGE M. GONZALEZ

COLUMNS

24 **Starting Line**

The Votes Are In! » BY PETE VIEIRA

26 **Readers Write** » BY PETE VIEIRA

39 **Inside Scoop** » BY JOHN HOWELL

52 **Readers' Rides** » BY PAUL ONORATO

60 **Pit Tips** » BY GEORGE M. GONZALEZ

66 **Troubleshooting** » BY GEORGE M. GONZALEZ

169 **Racer News** » BY THE RC CAR ACTION TEAM

217 **Monster Shop**

Project WRAM Charger » BY KEVIN HETMANSKI

227 **Product Watch**

Novak Super Sport Plus & Trinity Revo Aluminum Components » BY THE RC CAR ACTION TEAM

249 **Backlot**

Cool Car, Brave Kid » BY PETER VIEIRA

RESOURCES

163 **Reader Survey!**

Let us know how we're doing!

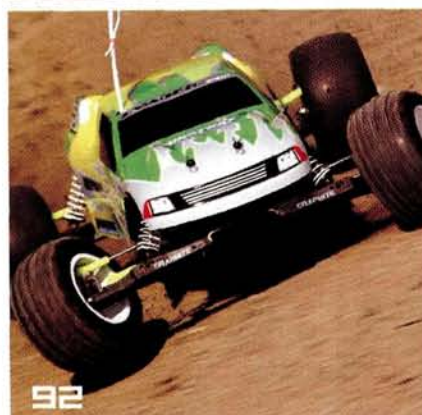
234 **Find It**

237 **Track Directory**

244 **RCStore.com**

247 **Index of Advertisers**

247 **Customer Service Information**





The votes are in!

THOUSANDS OF YOU VOTED IN THE ANNUAL "READERS' CHOICE AWARDS," and now it's time to announce the results. That means it's also time for the annual salvo of incredulous emails and letters telling us which products "everybody knows" should have won. So this year, I've decided to preempt the pundits with my boilerplate responses. This oughta save some paper and bandwidth.

"I CAN'T BELIEVE YOU GUYS PICKED [INSERT PRODUCT]."

Don't blame us, you made all the picks. It's "Readers' Choice," not editors' choice!

"THAT THING ISN'T EVEN OUT YET. HOW COULD IT WIN?"

It won because you voted for it after you saw it in *RC Car Action*, in an ad, or on the Web. We aren't bothered if it's not on sale yet because it sure didn't bother you when you voted.

"IT'S FIXED; [BRAND] WINS EVERY YEAR."

Actually, if it were fixed, we would mix it up a lot more. Don't get me wrong; I think undefeated brands like Airtronics and Pro-Line deserve every vote they get, but upsets (like LRP beating Novak last year) are far more interesting than, "Brand X wins again." But all we do is count the votes.

"HOW COULD YOU PICK THAT GUY AS BEST DRIVER? HE DIDN'T WIN AS MANY RACES AS [OTHER DUDE]!"

Once again, we don't pick anything; you do. And again, there are no rules as to how you pick your favorites, including drivers. If it were based purely on wins, we wouldn't bother asking you; we would just tally the victories and send the winningest guy a trophy. Vote for the guy with the best eyebrows if you like; we don't care.

In This Issue

THE LOSI JRX-S IS HERE!

It isn't just the most highly anticipated Losi tourer ever; it's arguably the hottest release of 2005. Any new Losi is big news, but when the car seems to toss out all the earmarks of the previous designs (heck, it doesn't even have a molded chassis), that adds a whole 'nother level of interest.

GO DIGITAL!

The digital-servo scene is exploding with new models and ever-shrinking prices, so it's high time you upgraded to the superior strength, speed and precision of a digital servo. We've gathered all the latest for your comparing pleasure. C'mon, treat yourself.

WE DYNO THE COBALT

Trinity's newest modified powerhouse gets the dyno-test treatment this month. Is it really better than the D-series mods, or just bluer? We test Big T's latest mod-motor tech to find out.

SOUND OFF!

Be sure to take our survey on p. 163. It's your chance to be heard and make a difference. Oh yeah, you could win free stuff, too.

See you in 30,

Peter Vieira
Executive Editor

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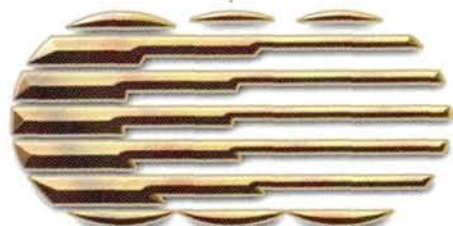
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READERSWRITE

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Fat-tire Fusion

In the "High Speed Head to Head" (June 2005), you mentioned adding bigger wheels and tires to the CEN and noted that it actually slowed the car down. Why didn't you do the same test with the Schumacher car? Given its superior acceleration (as you describe elsewhere in the article), it seems like it would have been a better candidate for the test. [email]

Leonard Jameson

Right you are; unfortunately, we conducted big-tire testing after we wrapped up the body-on/body-off speed trials for the "Aero Factor" sidebar. As you'll recall, the bodiless Schumacher Fusion was rendered undrivable when it went airborne at full speed.

—Pete

Thank Steve

I've been involved with RC vehicles for almost four years and have even gotten my grandson involved. Everything I've learned about RC vehicles has been through your magazine. After I modified the XTM engine in my 4WD stadium truck per your story "How to Hot Rod Your Engine" in the February 2004 issue, the results were so overwhelming that I felt compelled to tell you about it. I don't have any figures to give you, but the engine response and power are so much better than it was in stock form. Now it can spin the Pro-Line Dirt Hawg tires on asphalt, which it never could do before. The difference in performance is very noticeable. Thanks for the help, and keep up the good work with the great magazine that I look forward to reading every month. [email]
Warren Sentivany
WSentivany@aol.com

Well, I can't take all the credit. Or any credit, actually! Senior Technical Editor Steve Pond is The Man when it comes to nitro engine performance, and that piece is one of his most popular. You can't beat free speed!

—Pete

Wassup with Rally?

I find it hard to believe that there isn't a huge rally scene in the world of RC. If there is, I know nothing of it. Electric on-road is cool, and off-road is nice as well (aside from the wretched look of truck bodies—my opinion), but where are the rally-mobiles? I mean true rally cars—not just on-road cars with rally

block tires. A friend of mine found a number of older HPI rally electric cars on eBay, but is that it? I've had my eye on Tamiya's old Porsche 959 for a while now, but dropping the bank to get such a slick rally car seems risky due to the rarity of parts. Which companies are currently making 1/10- or 1/12-scale rally cars? I don't mean on-road cars that can run on dusty, pebble-strewn pavement but rugged off-road and on-road cars. Maybe they're out there and I just don't know about it. [email]
Edison Drake

The popularity of WRC has resulted in numerous body offerings and some great scale-oriented Tamiya kits, but there are no truly off-road-worthy rally machines out there. The closest any company came to your vision was Kyosho with its 1/8-scale- buggy-based LandMax series, which is sadly defunct. Back to eBay
—Pete

No Evading the Evader

Hi there; I just was curious about the T4 versus the Triple-XT. Every year, it seems that the readers choose either the newest Associated or Losi vehicle as their favorite (I'm referring to the July 2004 issue). I like the trucks but prefer to drive the buggies. The first year I raced, I ran a DuraTrax Evader BX and did quite well with it. This year, I bought the Factory Team B4; it seems like every good racer has one. In last year's "Readers Choice Awards," you picked the B4 as the first pick, the Triple-X as the second pick and the Evader as third. I would like to see the Associated Factory Team B4 versus the Losi BK2 versus the Evader Pro BX. That

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sounds like a great shootout where I think DuraTrax might get the recognition it deserves. I know you're going to tell me the Evader is the same as the old Double-X, but I still think it would be a great shootout. This might encourage people to drive electric buggies from brands other than Associated and Losi. [email] Brent

"Readers' Choice" is just that—readers' choice. We don't pick anything! With that cleared up, let me say that the Evader BX Pro is a fine buggy and is a great way to get started in racing, and sure, the next time we do a 2WD buggy shootout, it's in. —Pete

Get Savage

Hey *RC Car Action*, I would like to see more HPI Savage articles. I know you guys have the "Maxx Overdrive" section, and that is good for T-Maxx owners, and some of the stuff works for Savages, but not all. Why not have a section for Savage owners where you talk about good upgrades and mods, and how to make the Savage a good racer and whatnot? I bet that it would make many people out there happy. I hope to see more Savage articles; keep up the good work. [email] Nick Mackey
Holly, MI

Actually, we've combined "Maxx Overdrive" with "4x4" to create our new monster-truck column, "Monster Shop." You'll be seeing a lot of Savagery in there for sure!

School Daze

I'm looking at pursuing a career in RC design, but there doesn't appear to be just one course that leaps out and says, "RC Design 101." I'm taking physics, math and drafting in high school but wonder if you could tell me what kind of university course I would need. I think it would be a great profession to get into, seeing as I enjoy RC so much. Of course, I'll also be talking with the school's career counselors. [email] Steve Welsh

You're on the right track, Steve. If you go on to study mechanical engineering and industrial design, and keep up your driving chops, you can achieve your dream. And don't forget about being a good team player! Designers are rarely solo artists, and collaboration is key. Good luck. I hope I'll be interviewing you about your contribution to the latest winning design for the June 2010 issue! —Pete

YOU SAID IT

"Is there any benefit to buying a kit over an RTR?"

Is there any benefit to buying a kit over an RTR? I've already built a buggy, so I'm not intimidated by kits. Is there any real cost savings to buying a kit instead of an RTR? For example, one ad in your magazine advertises a Savage 25 RTR with all the required gear (except fuel) for \$424.95 while the same ad sells the Savage SS kit for \$339.95—a savings of \$85 bucks, but no radio gear, starting equipment, batteries, etc. Now, I know that even a pro will spend a significant amount of time assembling this truck at the factory, so why such a small difference in price? Do you recommend the RTR kit in this case? [email] J.B.

For \$85 bucks, you could easily finish the SS with radio gear similar to the stuff that's included with the Savage RTR, and you'll have a truck with better specs (the SS has some upgrades that the RTR doesn't). You won't have a Roto Start, but you won't need one because the SS includes a pull-start engine. Most other brands have similar cost breakdowns between kit and RTR versions of the same vehicle. What you really have to ask yourself is, "Do I want to build?" If the answer is no, then go RTR. If you really love to build, go kit. Either way, the cost is about the same once the vehicles are completed with all their required accessories. If you don't care

whether you build it yourself or not, the question is, "Do I want better radio gear than what comes with the RTR?" There's no point spending money on radio gear you don't want, so stick with a kit if you prefer better gear. —Pete

Every month, "Readers Write" sponsor Team Trinity awards the "You said it" letter writer the Reference body of his choice. This is the Trinity Wasp.



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XTM Racing Mammoth ST

Yes, the Mammoth ST looks more like a stadium truck than the original Mammoth, but don't be fooled into thinking that all XTM did was swap out bodies. Underneath that new Lexan shell are many changes, starting with the suspension. The truck now comes with four oversize shocks (in place of eight) with 3.5mm shock shafts. They are mated to heavy-duty, 4mm-thick, low-profile shock towers. Other changes include a 3mm 6061 aluminum chassis; a laydown steering servo setup; 17mm hex hubs with 8mm axles (they're stronger than the ones used on the Mammoth and are Pro-Line 40 Series ready); it comes with XLB gearboxes; the engine has been moved back in the chassis, and the drivetrain has been reconfigured for better weight distribution; the receiver and radio box are separate in the style of the Xterminator buggy; rear chassis cross-braces; and now optional reverse. The wheelbase is also the same as on the original Mammoth.

XTM Racing; distributed by Global Hobby Distributors (714) 964-0827; xtm.globalhobby.com.

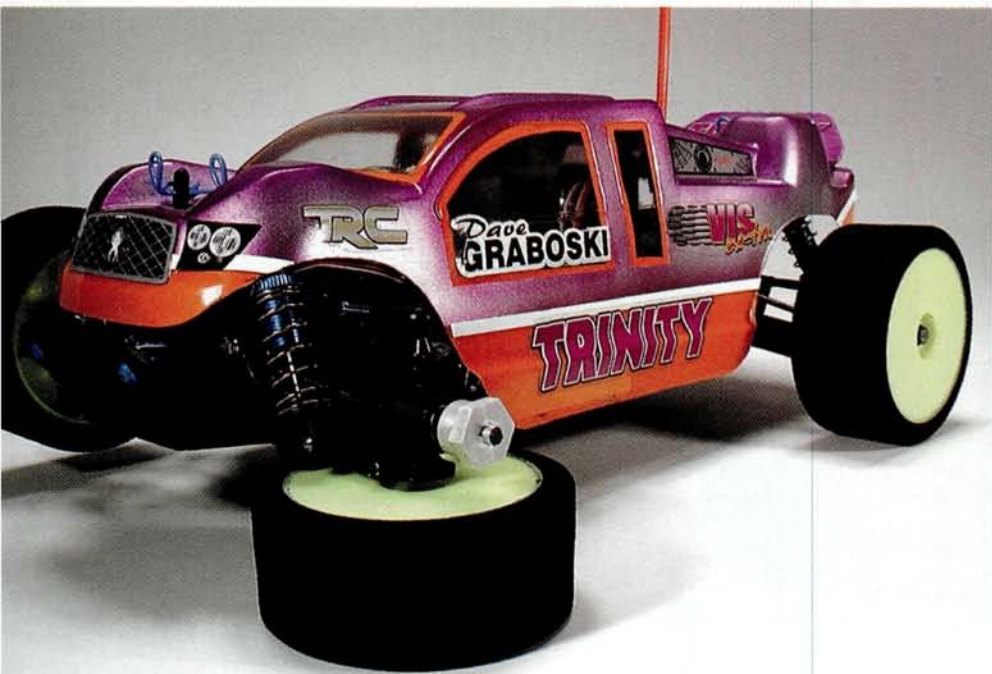


Trinity mini-truck wheel adapters

Trinity's new aluminum $\frac{1}{18}$ -scale hex adapters allow you to use touring car wheels and tires on your mini truck. Just imagine how cool it would be to rip around your street with a set of $\frac{1}{10}$ -scale tires on your Itsy Bitsy Spyder or RC18T! The adapters also fit the rear of the Team Losi's Mini-T.

Speaking of the Itsy Bitsy, Trinity now offers its $\frac{1}{18}$ -scale truck in a unique "bag" package that includes a Trinity motor, servo, battery, charger and hauler bag. All you have to do is drop in your radio gear!

Trinity Products Inc. (732) 635-1600; teamtrinity.com.



POWER ZONE



Team Orion Element V2 19-turn modified

Team Orion's Element V2 19-turn modified uses the same TOP V2 technology as found in its world championship-winning Revolution modified motors. You get the same precision CNC aluminum endbell, angled (V) brush setup with cylindrical brushes, intelligent anti-vibration spring system, zero-vibration ball-bearing system, but add in a 19-turn tagged armature, too, for spec racing. The motor comes with 24 degrees of fixed timing and is equipped with Orion's high-performance, long-lasting Enduro compound brushes and cylindrically coiled Inox steel brush springs. You also get Orion's inboard capacitor system with circuit confirmation LED.

Team Orion Inc. (714) 694-2812; team-orion.com.



Team Losi spin-start conversion for pull-start engines

Team Losi now offers its hand-held Spin-Start system for most small- and big-block engines. An included backplate

replaces the plastic pull-start assembly, allowing the use of the Spin-Start. Or, if you already have an electric drill, you can use Losi's Hex Starter Shaft to turn the engine over. So, cut the cord, so to speak; it's never been easier to change over to shaft-starting than with this!

Team Losi; distributed by Horizon Hobby Inc.
(800) 338-4639; teamlosi.com; horizonhobby.com.

KO Propo

VFS-2 speed control

The VFS-2 mid-level ESC is based on KO's high-end VFS-1 unit. The VFS-2 carries many of the same features as the full-blown race unit but has slightly lower specs (meaning it has less FETs). It can handle 4 to 7 cells and has 32 throttle steps with 64 frequency settings (between 0.9 to 12kHz) for each step. Like the high-end model, the VFS-2 allows you to adjust neutral brake settings as well as the frequency of the brake. It also lets you adjust the BEC voltage setting, throttle response and current limiter.

While prepping our digital servo guide for this issue (turn to page 136), we learned that KO has a few new servos in the pipeline: a new microservo for 1/18-scale applications and two new standard-size, high-torque servos on the way. Heat-sink-style cases and metal gears should be in the mix, and the rumor is that both have a metal collar in the upper case for added durability. As soon as we get more info, we'll pass it along.

KO Propo USA Inc. (310) 532-9355; kopropo.com.



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Team Associated

TC4 RTR

Associated's new TC4 RTR touring car comes spec'd out with some pretty nice gear. The car comes with an LRP AI (artificial intelligence) forward and reverse digital speed control, a powerful Reedy-based 15-turn motor and a painted body in one of two color schemes (that can be customized with the included street-tuner decal sheet). "AE by Airtronics" AM radio gear comes installed, and unique treaded tires are mounted on chrome 8-spoke wheels. Lightweight composite CVDs are included along with ball diffs and VCS (volume-compensating shocks) oil-filled composite shocks. Sounds like a pretty sweet ride!

Team Associated (714) 850-9342; teamassociated.com; rc10.com.

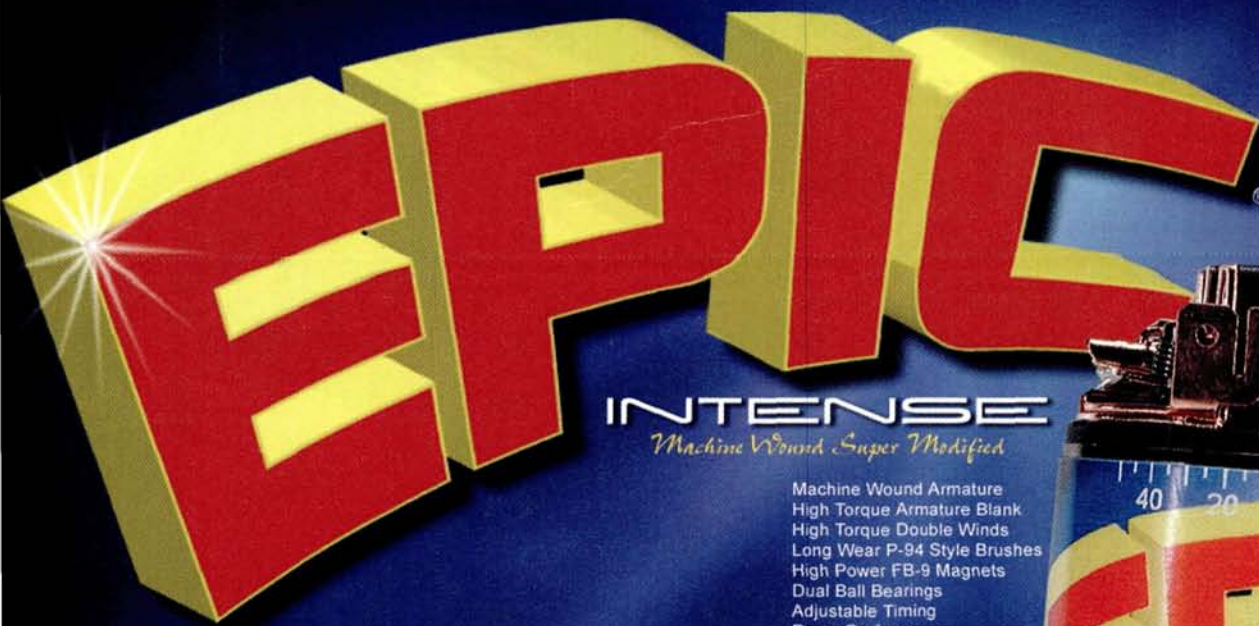


HOT RUBBER

Pro-Line Racing Moab nitro buggy tire

Pro-Line's Moab all-terrain truck tread is now available for 1/8-scale off-road buggies. The Moab tread is superaggressive, yet according to Pro-Line, it is also responsive on a variety of surfaces such as dirt, pavement, grass and sand. Its deep channels are designed to dig into the surface below, and that also helps the tire work well on loamy tracks. The tires are made from M2 compound and come with firm foam inserts.

Pro-Line (951) 849-9781; pro-lineracing.com.



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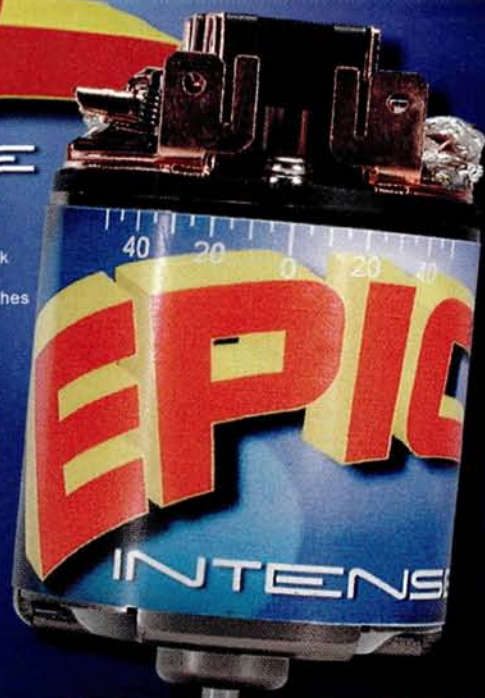
EP1118, 13 Turn Double, Excellent for 2WD Off-Road Racing

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Pro-Line Racing F-650

Pro-Line makes some of the baddest monster truck bodies, and this new F-650 definitely fits the mold (no pun intended). The F-650 is the newest and biggest Super Duty F-Series Ford truck ever built, and now you can top off your favorite monster truck with one. The body faithfully re-creates the bullnose front end, full four-door cab, long bed and aggressive styling found on the real deal. The decal sheet features cleanly finished-off headlights and taillights, grill detail, door handles, latches and Pro-Line and Ford logos. It's also made from 0.060 Lexan for added toughness. Pro-Line (951) 849-9781; pro-lineracing.com.



Yokomo MR-4TC BD

The MR-4 TC BD is Yokomo's new top-of-the-line belt-driven tourer (hence the BD designation). As you'd expect with such a high-end racer, it comes with plenty of carbon fiber: the main chassis plate, upper deck, shock towers, steering center link and battery hold-down are all made of the super-rigid material. The main chassis plate has new battery inserts that fit various cell sizes. Other cool features include large-diameter pulleys and eccentric belt-tensioners, titanium turnbuckles, threaded shocks with Rayspeed springs, aluminum bellcranks, and split bulkheads for easy belt-tension adjustments and maintenance.

Yokomo USA (949) 252-8663; yokomousa.com.



Vantage Racing carbon-fiber chassis for Traxxas Revo

How trick is this thing! That's right; you're looking at a fully woven-fiber chassis for the Traxxas Revo. According to Vantage, this chassis is made as a direct replacement for the stock aluminum chassis, and it has taken some significant abuse in initial testing. The Vantage chassis is also supposed to be about half the weight of the stock chassis. Aside from it being superlight, you have to admit that this thing is definitely an engineering masterpiece! Vantage Racing; vantageracing.com.

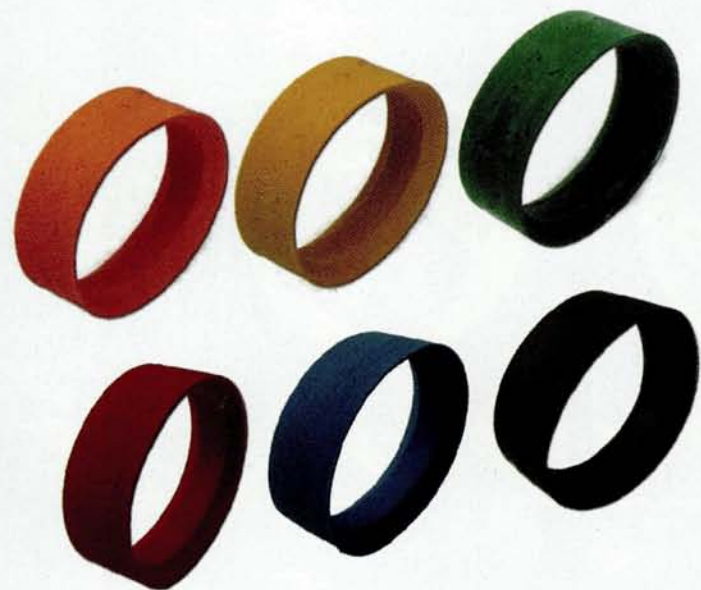


HPI Racing

Nitro RS4 3 EVO RTR

HPI's popular RTR Nitro RS4 3 is now available in "Evo" trim. So just which evolutionary features do you get? How about a new Nitro Star T-15 engine with a large heat-sink head, a tube aluminum header, an HPI Roto Start System, an adjustable 2-speed transmission; glued D-compound X-Pattern tires; chrome-plated Split 6 wheels and a painted, decaled and trimmed body? The RS4 3 Evo is available with either a Venom T-10 street truck body, a Toureza racing sedan, or a Stiletto V12 supercar design.

HPI Racing (949) 753-1099;
hpiracing.com.



Schumacher

Low Profile Tire Inserts

Schumacher's new LP (low profile) inserts are now available in three compounds. The yellow insert is the soft version, green is medium and orange is extra soft. According to Schumacher, these inserts provide a good air gap and suit Take Off CS, RP, Powers and M1 T27 tires.

The new Schumacher CP (crown profile) inserts also come in three compounds: aqua (soft), black (medium) and magenta (extra soft). These inserts have a slightly raised center profile for less air gap than the LP inserts for use in Sorex, Take Off CS, RP and Powers tires.

Schumacher USA (813) 889-9691; racing-cars.com.

POWER ZONE

Reedy Flash modified motor

Reedy Modified now offers a new line of budget-priced, machine-wound modified motors based on the winning "Kr" modified can. According to the folks at Reedy, they feel that these adjustable-timing, quad-magnet motors are perfectly suited to upgrading your electric ready-to-run. The motors come in 15- and 17-turn configurations and have standup brushes.

Reedy's brush-vibration damping system, surface-mount capacitors, ball-bearings and bullet connectors. Reedy also tells us that it uses straight-leg armature laminations for increased rpm.

Reedy; a division of Team Associated (714) 850-9342; teamassociated.com.





Pro-Line Racing 23mm HD buggy hub adapters

Looking to turn your 1/8-scale buggy into a monster truck? Check out Pro-Line's 23mm HD hub adapters for the Kyosho 777, Mugen Prospec/MBX-5 and OFNA Hyper 7. These adapters allow you to use Pro-Line's 23mm HD system, which offers a wide variety of tire choices including the 40 Series Bow Tie and the all-terrain giant Moab. You can also choose from numerous 40 Series wheels including two different offsets. The hexes, made from 6061 aluminum, are standard bolt-ons. All you have to do is remove the original hex and install the new 23mm hex with the original hardware. The adapters extend the wheelbase to the desired track width to fit a monster-truck tire. Pro-Line (951) 849-9781; pro-lineracing.com.

Dynamite Tazer 19T speed control

Dynamite's new entry-level Tazer ESC is designed to operate with stock motors (19 turns and higher). This proportional forward and reverse speedo comes with Thermal Overload Protection and is prewired with a Tamiya battery plug, bullet-style motor connectors and a universal RX plug that fits JR, Futaba J and Hitec radios. It also has pushbutton programming, which makes setup a breeze, and a time-delay brake setting (so you don't munch your gearbox in your car or truck).

Dynamite; distributed by Horizon Hobby (800) 338-4639; dynamiterc.com.



HPI Racing Mustang, Corvette and F-100 shells

HPI Racing has three new bodies: a 1956 Ford F-100, a 2005 Chevrolet Corvette C6 and a 2005 Ford Mustang GT-R. Each body faithfully re-creates its full-size counterpart. All three bodies also come with precut window masks and a full complement of decals to complete the job. The Corvette and Mustang bodies come with racing wings and are molded from 0.030 Lexan, while the Ford F-100 is molded from thicker 0.040 Lexan for added durability. HPI Racing (949) 753-1099; hpiracing.com.



FlexTek RC titanium suspension-arms

These are some wild-looking arms! They are machined out of solid titanium and include all the necessary mounting hardware. There's no way you're gonna break or bend these arms; if you do, we want to see what your truck is jumping off. The arms are available for the Team Losi LST and Traxxas T-Maxx.

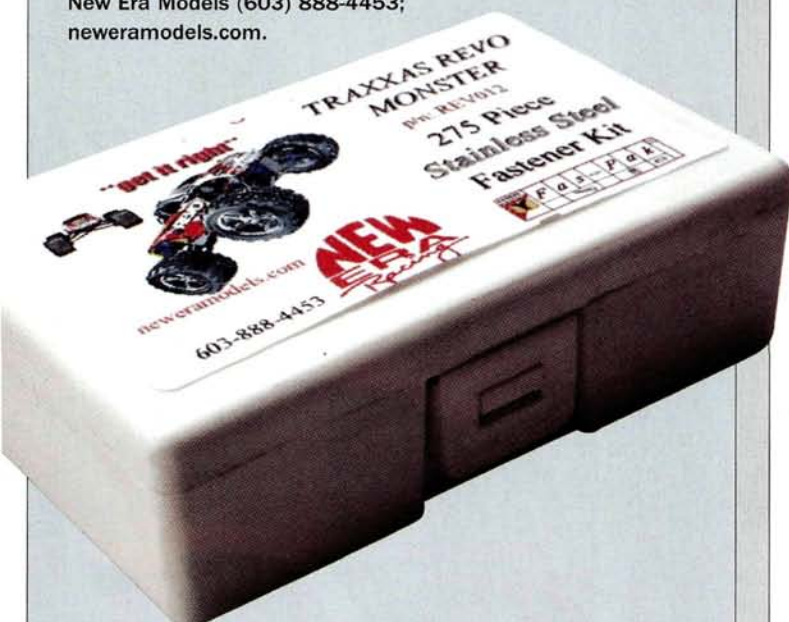
FlexTek RC (541) 990-7248; flextekrc.com.



NEW ERA stainless steel screw kits

New Era's new stainless steel screw kits allow you to replace all the stock screws that come with your vehicle. The screws come packaged in a convenient plastic case. Currently, New Era offers kits for the XTM Mammoth; OFNA Titan Twin; Tamiya TLT-1, TXT-1 and TNX; Traxxas Rustler, Revo and T-Maxx; Team Associated Monster GT; HPI Savage; Team Losi LST and Mini-T; and Kyosho Twin Force.

New Era Models (603) 888-4453;
neweramodels.com.



Medial Pro M3K modified off-road engine

Medial Pro's new long-stroke, 5-port M3K picks up where the M2K and M2K Evo engines left off. Novarossi manufactures the new engine to Medial Pro's specs that consist of a new JP Racing black-hard-anodized, reinforced and ventilated crankcase; an XS R5-type conrod; a tuned, epoxy-balanced JP hard black turbo crankshaft; new ventilated carburetor with removable 8mm carb insert; large blue cooling head and more. According to Medial Pro, the M3K pumps out 2.5hp at 35,000rpm.

Medial Pro; distributed exclusively by General Silicones Group Inc. (626) 338-3815; gsracing.com.



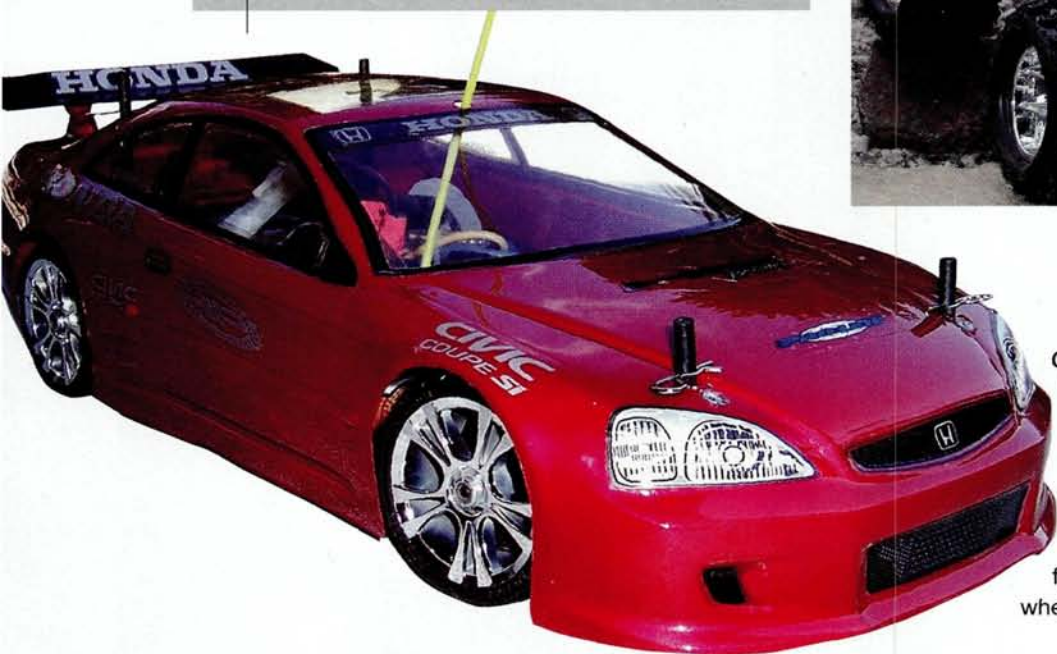
**reader's ride
OF THE MONTH**

Rick DeWeese > Santa Barbara, CA
Traxxas T-Maxx 2.5

New to the hobby, Rick jumped into RC with both feet and built a fully customized T-Maxx. He credits RC in helping him and his family to get through some hard times by giving them an outlet to work together. He wanted a trick-looking—but raceable—truck. A load of Integy's great-looking, anodized-aluminum aftermarket parts made it onto his creation: a super-duty chassis with skidplates and braces, wide suspension-arm kit, bulkheads, turnbuckles, servo mounts, bumpers, 8 piggyback shocks and battery and receiver boxes. A chrome engine cooling head and disc brake from Crazy Nut Racing, MIP CVDs, Robinson Racing slipper clutch and tranny gears, JR Racing servos and Pro-Line wheels and tires complete the truck.

Jeffrey A. Boyce > Battle Ground, WA
Traxxas T-Maxx 2.5

Jeff named his modified T-Maxx "Rolling Thunder" and the driver that is installed into a Pro-Line Hummer H2 body, "Whiplash." The truck rolls on Team Losi's aggressive-looking Zombie-Maxx tires wrapped around RPM chrome Monster Clawz wheels. The rest of the truck is loaded with Dynamite's aluminum hop-ups.



Chris Schurter > Plover, WI
Team Losi Triple-XS

Chris's Triple-XS was picked to be in the mag because he did such a good job shooting pictures of it. This Losi touring car is his first RC vehicle, and he started out by switching to a Honda Civic body from HPI and adding Pro-Line chrome wheels. Welcome to the hobby, Chris!

SEE YOUR RIDE IN READERS' RIDES AND WIN NOVAK GEAR!

If we feature your vehicle in Readers' Rides, you win a one-year subscription (or renewal) to RC Car Action. Reader's Ride of the Month wins a Novak battery pack, and Reader's Ride of the Year wins a Novak brushless motor system! Email your 300dpi TIFF or JPEG images to readersrides@airage.com, or send color prints and a description to Readers' Rides, RC Car Action, 100 East Ridge, Ridgefield CT 06877-4606 USA. Be sure to write your name, address and phone number on the back of each photo and on your letter. Submissions will not be returned.



[READERS' RIDES]

Jeff Brown > Merced, CA
Team Losi Mini-T

When Jeff bought his Losi Mini-T, he figured it was a good, inexpensive way to get back into RC.

Then he discovered all the aftermarket support for the mini truck and purchased a new motor and battery pack. From there, he just could not stop; he has since added a Trinity Micro Monster motor and

metal pinion set, a Team Orion Baja Micro Modified motor as a spare, Losi aluminum shocks, CVDs and ball bearings, a Venom 1100mAh micro battery pack and a bunch of graphite, aluminum and titanium parts from 3Racing.



Chris Hernandez > Pembroke Pines, FL
Traxxas Nitro Rustler 2.5

Stadium trucks are Chris's vehicles of choice, and of the three he owns, this Nitro Rustler is his favorite. He kept the powerful TRX 2.5 engine that came in the truck and added an aluminum tuned pipe from Traxxas to squeeze even more juice out of it. Next, he beefed up the suspension arms and shock towers with purple-anodized aluminum parts from Powerline Racing. Chris painted a Pro-Line Chevy Silverado body and used Team Orion Main Event decals to finish it off. RPM chrome Slingshot wheels with Pro-Line Blade and Step Pin tires provide the traction he needs for the dirt.

POWER UP YOUR RTR!

#700 Reedy "Rated-X" Sport Pack, GP 3300 cells

ONLY \$64.99 Suggested Retail Price



Reedy "Spec 19 Quad-Mag Motor."

Step up the power of your RTR with Reedy's Quad-Magnet "Spec 19" Motor! A great choice for the B4 RTR, the TC3 RTR, or any Ready-to-Run electric with a speed control rated for a 19-turn or less motor.

#513 Reedy Spec 19 "Quad-Mag" Motor



Reedy's "Rated-X" Matched Sport Packs. Fully assembled in clear tubes so you can see the matching info right on the label of each cell. Don't settle for "mystery" cells in your sport packs, get Reedy's "X-Rated" packs and see the power you've been missing!

Reedy Ni-MH Receiver Packs for Nitro Cars and Trucks. Reedy receiver packs give you the long-lasting, reliable power needed for nitro racing, and have a great low price that makes them your BEST choice!

#615 Reedy Ni-MH Receiver Pack, (Hump style for RC10GT, Monster GT, Etc.)



#614 Reedy Ni-MH Receiver pack, (Flat style for Nitro TC3, etc.)

#699 Reedy "Rated-X" Sport Pack, Panasonic 3000 cells

ONLY \$59.99 Suggested Retail Price

Bryan L. Walters > Foothill Ranch, CA
HPI Savage 25

This Savage is a "Mini-Me" version of Bryan's cherished, full-size Ford F-150 SuperCrew. While flipping through the pages of *RC Car Action*, he saw a picture of a Pro-Line Ford F-150 SuperCrew and was instantly inspired to build a replica of his pickup. Pro-Line Maxx Road Rage tires mounted on Velocity wheels complete the look. Under the body, he added an aluminum tuned pipe and aftermarket shocks from HPI and a Hitec high-torque steering servo.



John Matrison > South Deerfield, MA
Team Associated TC3 Racer

This nice-looking TC3 Racer comes to us from a longtime friend. John painted a Pro-Line Alfa Romeo body and mounted treaded rubber tires on a set of chrome Hot Works rims. Underneath is a Novak XXL FM receiver commanded by a JR Racing XR3i transmitter and an MTroniks Sonik4 ESC feed power to a Team Orion Core stock motor that is fitted with an Associated wide motor heat sink. ■

Mini-MAX

Reedy Hop-Ups for Micros!

ONLY
\$42.99 Suggested
Retail Price



ONLY
\$44.99 Suggested
Retail Price



Reedy Mini-Max Modified Motor.

Seriously turn up the heat in your micro with the Reedy Mini-Max Mod Motor. Big time features like ball bearings and replaceable brushes are shrunk down to the popular 280-size to fit most 1:18 vehicles, especially the RC18T.

#290 Reedy Mini-Max Modified Motor

Reedy Mini-Max High-Voltage 1100 Ni-Mh Racing Battery Pack. Higher voltage means more power and that's just what you get with Reedy's new Mini-Max 1100s. Featuring much higher voltage output than stock battery packs the Mini-Max HV 1100 pack is the ticket to making your micro car rip up the road. Comes completely factory assembled with connector and fits directly into the RC18T!
#616 Reedy Mini-Max 1100 Ni-Mh Battery Pack

www.rc10.com/reedy

REEDY

A Division of Associated Electrics
3585 Cadillac Ave. Costa Mesa, CA 92626

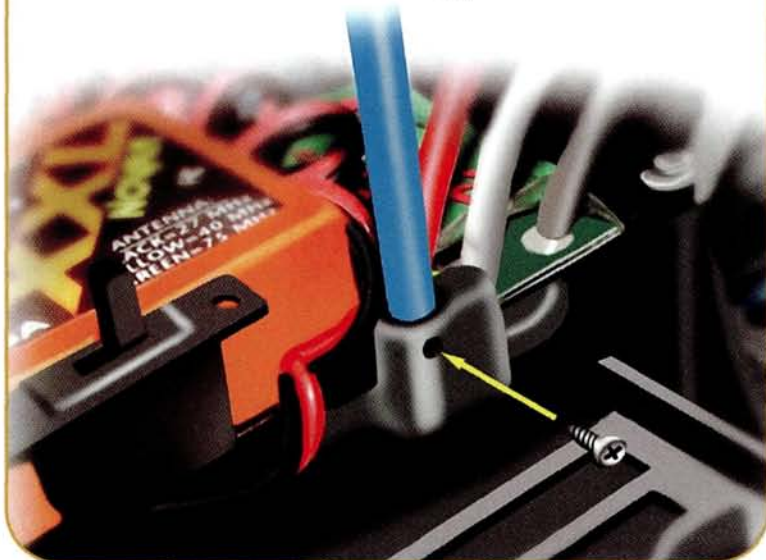


YOUR TIP

Secure Mini-T antenna

Brian Bernardo > Stratford, CT

The Mini-T's antenna holder can lose its grip on the antenna tube, and that will cause the antenna to slip off the mount. To fix this, drill a small hole through the antenna holder, and thread in a small screw. The antenna tube will stay put.

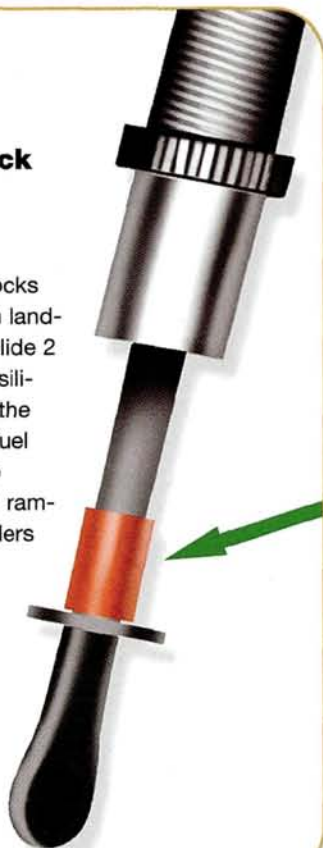


YOUR TIP

Fuel-line shock cushions

Blake Scott
> Littleton, CO

To protect your shocks from damage when landing off big jumps, slide 2 to 3mm lengths of silicone fuel line over the shock shafts. The fuel line will prevent the shock pistons from ramming into the bladders inside the shocks.



Handcart back-saver

If you're a diehard nitro racer, you probably haul a lot of equipment to the track. Sometimes, the trek to the track is long, and that makes carrying stuff a pain (literally!). Take a handcart with you so that you can roll your gear. Your back will thank you.



Recycled shock-fluid bottles

Clean empty shock-fluid bottles with soap and water to remove the fluid left inside. You can use the bottles to store liquid dishwashing soap for off-road tire cleaning at the track. One bottle holds enough soap to clean dozens of tires.



Easy 18T wing

The RC18T jumps much better with a rear wing installed. The kit doesn't include a wing, but you can easily make one out of Lexan. Slightly bend a 2.25x1.5-inch Lexan rectangle in the middle. Attach the wing to the truck's tailgate section with servo tape or Shoe-Goo, and then secure it with screws and nuts.

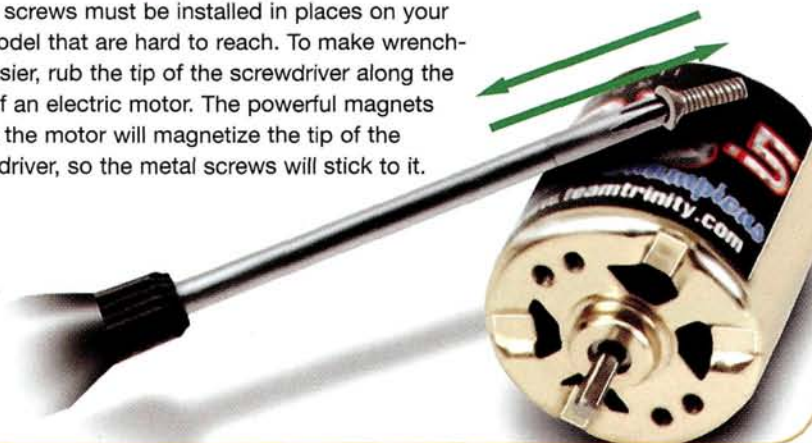


YOUR TIP

Magnetized screwdriver tip

Geoffrey Danielson > Quebec, Canada

Some screws must be installed in places on your RC model that are hard to reach. To make wrenching easier, rub the tip of the screwdriver along the side of an electric motor. The powerful magnets inside the motor will magnetize the tip of the screwdriver, so the metal screws will stick to it.



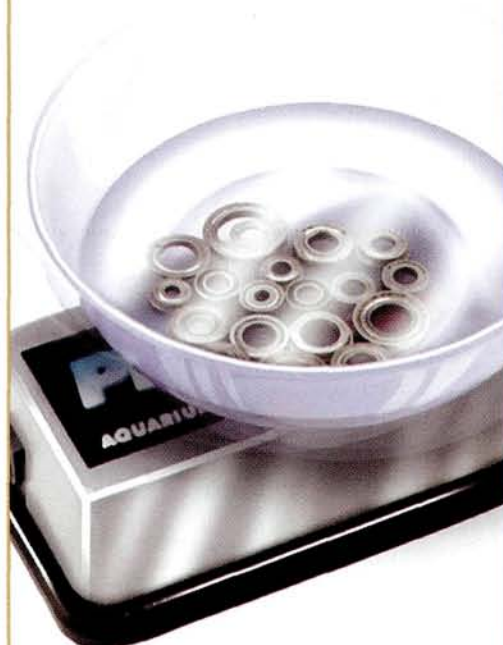
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rccaraction.com
»» More Pit Tips online!

YOUR TIP

Fish-tank bearing cleaner

Mark Sanchez > Santa Monica, CA

Place a small plastic bowl filled with solvent on top of a fish-tank pump to clean bearings and other small RC parts. The pump's vibration works as an agitator to dislodge small particles from inside the bearings. You can also place a small mesh screen inside the bowl to lift the parts and allow dirt and grime to pass to the bottom of the bowl.



WE WANT YOUR TIPS!

If we publish your tip, you'll win a 6-month subscription (or an extension) and a chance to win the "Tip of the Year" grand

prize: an OFNA RTR. Email your tips to GeorgeG@airage.com. Include a photo or scan a sketch if you can. Snail mail? Write to Pit Tips, 100 East Ridge, Ridgefield, CT 06877-4606 USA. Be sure to write your name, address and phone number on each tip you submit.



We screen all Pit Tips for functionality, feasibility and safety but do not test them. RC Car Action is not responsible if you mess up your gear or yourself by using the tips given here. If you aren't comfortable following any tip we show—DON'T!



Stubborn hex hubs

Q I've equipped my Monster GT with Pro-Line 23mm HD hex hubs. The only problem is that the rims are hard to remove from the truck. I have to pound the wheels with a hammer so they'll slip off the axles; unfortunately, I've broken a few drive pins in the process. Is there any way to get these wheels off without snapping the drive pins? [email]

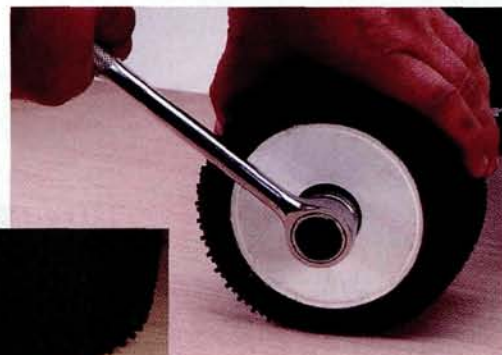
Alex Panossian

A I suspect that you're removing the rims by loosening the locknuts that secure the HD hex adapters to the stub axles instead of simply removing the 23mm nuts that secure the rims to the hex hubs. Once the wheel is installed, the drive pins fit very tightly inside the aluminum hex hubs, and trying to separate the wheels from the hubs can cause the drive pins to snap in half. The trick is to remove the rims by loosening the 23mm nuts (not the axle locknuts), which leaves the HD hex adapters installed on the axles. Pro-Line offers a 23mm wheel wrench (item no. 6038-2) to make installing and removing the 23mm hex hub rims much easier. You can also use a ratchet wrench with a 23mm socket and a shaft extender, but the Pro-Line wrench is less expensive and looks cool in your toolbox.



Above: use a 23mm wrench to remove the wheels from the HD hex adapters.

Left: the hex adapters must stay installed on the stub axles; removing them almost always leads to broken drive pins.



QUICKQUESTION

Q: I picked up a Werks Racing 1/8 off-road adjustable Power Clutch and installed it on my Picco P7 engine that's in the Mugen MBX-5. Now the engine has to rev excessively before it drives the wheels, and that causes it to overheat. What should I do?

Talbot Mar

The Werks Power Clutch comes with three springs; you probably installed the stiff silver or even stiffer gray spring. Install the soft gold spring, and the clutch will engage at a lower rpm.

The shoulder screws must be threaded into the steering knuckle arms perfectly straight. If the screws go in crooked, you'll have binding.



The TLT-1 steering knuckles look similar, but they aren't interchangeable. The C2 knuckle arms go on the right side of the truck, and the C1 knuckles go on the left. Installing them backwards will cause steering binding problems.

Binding steering hubs

Q Please help. I bought a Tamiya TLT-1 Max Climber to scale the rocks alongside my house. The kit went together well, but the steering knuckle arms bind considerably, and this causes the steering servo to struggle. What could cause this problem? [email]

Marcus Green

A Double-check the instructions to make sure that the steering knuckles are installed correctly. The left and right knuckles look similar, but they are not interchangeable. The C2 knuckles must be installed on the right side of the truck, and the C1s on the left. If they are installed cor-



rectly, it could be that the shoulder screws that secure the knuckles to the axles might not have been installed perfectly straight. If the shoulder screws go in at an angle, steering binding problems are sure to arise. Remove the steering knuckles from the axles by removing the shoulder screws. Next, thread the shoulder screws back onto the steering knuckles so you can check whether they are indeed threading in straight. If they look crooked, loosen the screws slightly, and then tighten them down straight.



Above: spray carb cleaner onto the bearings and into a bowl. Soak the bearings in the solution while you gently agitate the bowl.

Left: it might be necessary to remove the bearings' metal shields to properly clean the bearings. Use the tip of a hobby knife to pry the shields free.

Gritty bearings

Q I cleaned my nitro truck thoroughly and removed the bearings for inspection. A few of the bearings felt really gritty, so I cleaned them with nitro cleaner and sprayed compressed air through the metal shields to dry them out. I also lubed them with WD-40 after they had dried. The bearings feel much better, but they're still a little gritty. I hope that I don't have to replace them because my truck is less than two months old. [email]

Jeff Ing

A You're on the right path by properly maintaining your vehicle, Jeff. Sometimes, dirt will remain trapped inside the bearings even after a thorough cleaning, though. As far as solvents go, I found that a gumout carb cleaner (available at any auto-parts store) works best. This type of cleaner will cut through dirt and grime better than any other type of solvent or degreaser. Place the bearings in a small bowl, and spray the solution directly onto the bearings and then into the bowl. Soak the bearings for 10 minutes and gently agitate the bowl every 30 seconds or so. Remove the bearings from the solution and place them on a clean towel to air dry. Apply a few drops of WD-40 or bearing lube to the bearings after they have completely dried, and they should spin like new. If the problem persists after cleaning, you'll need to remove the metal shields from the bearings and repeat the steps outlined above. If that fails, it's time to buy replacement bearings.

REAL PERFORMANCE PRODUCTS!

T-Maxx/2.5-Maxx Steel Top Shaft

NEW



This precision machined **hardened** steel top shaft will fit all T-Maxx. Includes oversize ball bearing. RRP 8525

T-Maxx/2.5-Maxx FORWARD ONLY Steel Gear Kit

NEW



This kit contains a 26T **hardened** steel output gear, a forward drive hub adaptor, steel spacer and Pin. RRP 8586. **Hardened** aluminum version RRP 8585.

T-Maxx/2.5-Maxx Hardened Forward Primary Gear

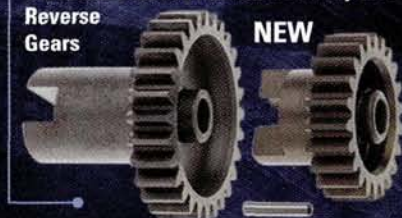
Precision machined from solid steel and then **hardened**. RRP 8529
Hardened aluminum version RRP 8528.

NEW

www.robinsonracing.com

T-Maxx/2.5-Maxx Forward Primary and Reverse Gears

NEW



This kit contains a precision machined **hardened** steel primary forward gear, a **hardened** aluminum reverse gear and pin. RRP 8521

MAKE NO COMPROMISES!

T/E-Maxx/2.5-Maxx Accessory Spurs



A wide range of spurs fit our Double-Disc Slipper Kits. Choose from machined Super-Tough plastic spurs in 66, 68, 70, 72, 74 and 76T sizes, RRP 82XX, or CNC machined steel spurs available in 65, 72 and 76T sizes, RRP 83XX. Small Clutch Plate/Gear Adaptor fits 65 thru 70T spurs. Large Clutch Plate/Gear Adaptor fits 72 thru 76T spurs.

T-Maxx/2.5-Maxx Lightened Spur And Double-Disc™ Slipper Kit



RRP's NEW line of Lightened Spur and Double-Disc Slipper Kits for Traxxas Nitro and T/E-Maxx/2.5-Maxx trucks are designed to improve performance and increase reliability. This combo incorporates a machined steel or Super-Tough plastic spur, a Vented Aluminum Clutch-Plate/Gear Adaptor, 2 Slipper Pads and Plates to deliver the adjustability you need and the increased performance that you demand. **Complete Slipper Kits** are available in the following sizes: RRP 8166 Slipper Kit with 66T Super-Tough plastic spur (Stock Size) for E-Maxx RRP 8172 Slipper Kit with 72T Super-Tough plastic spur for Traxxas Nitro RRP 8465 Slipper Kit with 65T Steel Spur for Traxxas Nitro RRP 8472 Slipper Kit with 72T Steel Spur (Stock Size) for T-Maxx. Spurs, Clutch-Plate/Gear Adaptor and Slipper Pads also sold separately.

T-Maxx/2.5-Maxx Primary Reverse Gear

This gear is precision machined from solid aluminum and **hardened**. Includes pin. RRP 8522

NEW

Universal axle won't stay put

Q I have a Kyosho 777 SP1, which is an awesome buggy, but for some reason, the right rear universal axle pops out of the diff outdrive cup when the buggy lands from big jumps. The problem started suddenly and has gotten worse as time went on. Now, the right rear universal pops off every time I land from a big jump. What do you think causes this problem? [email]

Bradley Summors

A I know of other Kyosho SP1 drivers who have experienced the same problem, Bradley. I can't really explain what causes it, but I can pass along an easy fix that comes directly from some of the Kyosho team drivers. Install a front universal axle (item no. ISW142) on the buggy's right rear side. The front universal axles are a few millimeters longer than the rears. The extra length will prevent the universal axle from popping off the drive cup when the suspension is completely compressed—as when the buggy lands from a jump. I know this sounds unusual, but trust me, it works. For some reason, the problem only happens on the right rear side, so you do not have to replace the left rear universal axle.



As you can see, the front universal axle (top) is a little longer than the rear.

QUICKQUESTION

I have an original Kyosho Burns that I bought from a friend. The upper front arm is stripped where the turnbuckle threads into it, and I can't find a replacement. Is there any way to fix the stripped upper arm?

Jon Silva

Good score, Jon! That's a highly sought-after collectors' item. Squirt hot glue into the hole and quickly thread in the turnbuckle. The glue will stick to the inside of the arm and form new threads.

T/E-Maxx/2.5-Maxx Steel Diff Gear Set



T/E-Maxx/2.5-Maxx differential gear set, includes: 1 beveled pinion gear, 1 beveled spur gear, 4 re-usable stainless steel Phillips head screws, 1 tube Associated Black Grease, and a shim kit for spider gears with 10 .003" shims. 2 sets needed per truck. RRP 8590

T-Maxx/2.5-Maxx Aluminum High Performance Brake Kit



New, lightweight aluminum high performance brake kit, includes bigger, more aggressive brake pads and steel backing plates. One piece vented rotor minimizes side-to-side wobble. Also fits newer T-Maxx. RRP 8562. Older style half shafts use Brake Kit RRP 8560.

DON'T SETTLE FOR SECOND!



T-Maxx Vented Flywheels



Aluminum vented flywheels move air over clutch bell, improving performance and cooling. RRP 8551 Blue, RRP 8550 Natural Silver. **NEW 2.5-Maxx Vented Flywheel, Blue Only RRP 8552.**

T/E-Maxx/2.5-Maxx Replacement Pinion



This precision machined steel pinion fits RRP 8590 Diff Gear. RRP 8591

T-Maxx/2.5-Maxx Hardened Steel Clutchbells



CNC Machined from solid steel these bells are built to last. They take the 5x11 bearing (NOT included). Available in 19T, RRP 8119, 20T RRP 8120, 21T RRP 8121 and 23T RRP 8123.

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Brushless Micro Rocket

Q I just installed a Mamba Brushless Motor system in my Team Associated RC18T, and I have a couple of questions. First, the switch doesn't seem to work; the electronic speed control (ESC) turns on the moment I plug in the battery, regardless of which position the switch is turned to. Is this normal? My second question is about speed; my vehicle isn't much faster than the Baja motor that I had installed in the truck, although I have noticed a huge increase in run time. Shouldn't the brushless motor provide a big boost in acceleration and top speed? I'm really happy with the system, but I wonder whether I can do something to increase performance. [email] Patrick McFargison

A The Mamba 25 brushless motor system will turn on the moment you plug in the battery. When the switch is off, no power will go to the motor, so you don't have to worry about your truck running away in the event you power up the speed control before you turn on the radio. Flipping the switch on allows power to be fed to the motor, so always turn on your radio first before you turn on the speed control. You didn't tell me which battery pack you're using and the type of connector that's soldered onto it, so it's difficult to answer your second question. The type of battery pack and connector you use will influence how the brushless motor system performs. You must use high-voltage GP 1100 Ni-MH batteries or Lithium-ion cells to get the most out of the Mamba system. The typical 2/3A cells that are used on most micro battery packs just aren't up to the task. You'll also need to use high-amp-draw connectors such as Deans plugs, because the tiny connectors that are included with most micro battery packs can only handle 5 amps or less. Since the Mamba system is capable of producing power spikes of 30 to 50 amps or more, the stock connectors will not be able to feed the motor the current it requires to run at maximum power. Pick up some good batteries and some good-quality connectors, and you'll notice a gigantic performance boost.



The Mamba 25 brushless motor system requires high-voltage battery packs to provide maximum performance. The GP 1100 battery pack (left) and the 2-cell 750mAh lithium-ion pack next to it are good choices. Notice the heavy-duty Deans connectors soldered to the batteries—a must for high-power applications.

RC10-GT Steel Combo



Precision machined from solid steel, then hardened, this 65T spur and 15T bell combo will last and last. RRP 2365

RC10-GT Hardened Steel Idler Gear



Cut from solid steel stock, this RC10-GT gear is lightened and hardened for super quiet precision and extra long life. Black tranny grease included. RRP 2213

Associated Titanium Stealth Top Shaft



CNC Machined from solid titanium, this super hard, super light top shaft will fit any Stealth transmission. RRP 1512.

RC-10GT Hardened Steel Clutchbells



These steel Clutch Bells are CNC machined from solid steel then the teeth are machined on. This makes the part stronger with less gear "run out". Available in 14T thru 20T, 22T and 24T. RRP 22XX

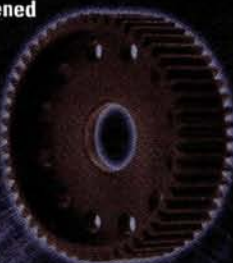
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RC-10GT 32 Pitch Spurs



Precision machined from heat-resistant, super tough plastic, these spurs mesh flawlessly with our Clutchbells. Available in 63T thru 67T, RRP 2263 - RRP 2267.

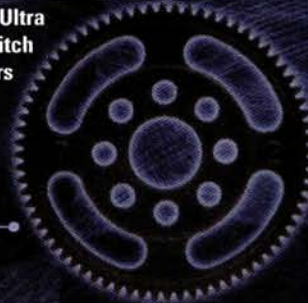
Hardened Diff Gear



Hard anodized, precision CNC machined aluminum diff gear. RRP 1513 RC10-GT

DON'T SETTLE FOR SECOND!

TC3 Ultra 48 Pitch Spurs



Precision machined from heat-resistant plastic, these spurs mesh flawlessly with our pinions. Available in even numbers from 70T thru 80T, RRP 1670 - RRP 1680.



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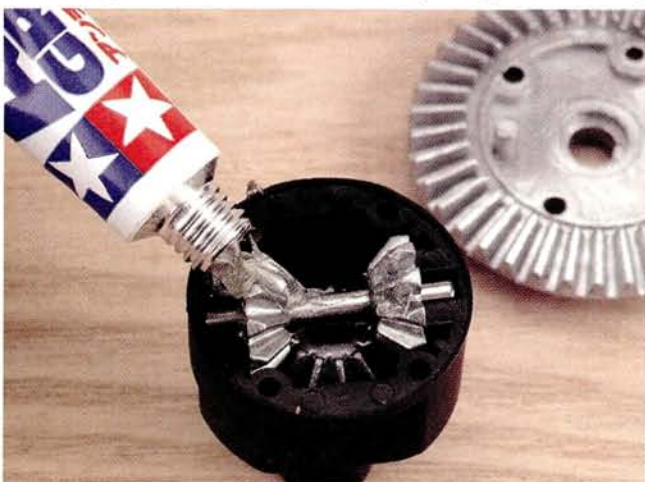


Easy gear diff tuning

Q I have an HPI RS4 3 EVO. I wanted to tune the diffs by using silicone diff fluid, but the fluid leaks out after one run and makes a mess on the chassis. I'm really bummed because the car handles much better before the fluid leaks out. Do you know of a way to seal the diffs so they can hold fluid? [email]

Charley Baker

A The RS4 gear diffs are not designed to hold diff fluid, as you already found out. Don't worry because you can tune the diffs with Tamiya Anti-Wear Grease (53439). The Tamiya grease is extremely tacky and will adhere to the internal bevel gears. You can tune the diffs by using more or less grease on the gears.



Be careful, though; too much grease, and you'll end up locking the diff completely. A small dab is all you need. ■

Tamiya Anti-Wear Grease will not fly off the gears when you drive the car, so one application lasts a long time.

TOOLBOX

Tamiya Micro Hammer

This small, compact hammer from Tamiya has a reinforced plastic handle with a nonslip rubber grip and comes with four replaceable heads that simply screw onto the hammer—a flat-iron, round-iron, brass and nylon head. The nylon and brass heads are perfect for use on items that could be damaged easily. We found that they work great for knocking stubborn flywheels off an engine and to tap hinge pins into place. **Tamiya Micro Hammer—74060; \$17.** Tamiya America Inc. (800) 826-4922; tamiyausa.com.



NEED HELP?

Send your "Troubleshooting" questions and comments to troubleshooting@airage.com, or mail them to "Troubleshooting" c/o RC Car Action, 100 East Ridge, Ridgefield, CT 06877-4606 USA.

HPI Savage 21 Nitro Steel Combo



This new 52 tooth Spur and 14 tooth Clutch Bell are CNC machined from solid steel and then hardened for unmatched performance and durability. RRP 7052

NEW

HPI Savage 21 Nitro Vented Flywheel



Aluminum vented flywheels move air over clutch bell, improving performance and cooling. RRP 7000

NEW

Stealth Spurs



These precision machined spur gears are super quiet. They're available in 48P in 60T thru 96T sizes, and fit any Associated or HPI electric car or truck. RRP 1860 thru RRP 1896.

Electric Car And Truck Pinions:

48P Absolute Series Pinions



Super hard, lightened and cut with unmatched precision. Great with any spur, but with an Absolute spur, even on-off noise is gone! Available in 48P in 16T thru 28T sizes. RRP 1416 - RRP 1428.

48P / 64P SuperLite Aluminum Pinions



They're lightened, hard coated and precision cut. Available in 48P in 16T thru 28T, and 64P in 24T thru 38T. RRP 30XX (48P) and RRP 31XX (64P). Only \$5.25

48P Hard Nickel Plated Steel Pinions



These precision cut gears have an extremely hard coating that makes them really last. Available in 12T thru 35T. RRP 1012 - RRP 1035

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ULTIMATE TEST

1/10-SCALE, ELECTRIC TOURING CAR

BY MATT HIGGINS PICS BY PETE HALL

The Team Losi camp knows racers crave revolutionary car designs, and each generation of its touring platform has been as radically different from previous versions as you could imagine. First up was the Street Weapon, which was a converted 4WD buggy with a sealed, 3-belt design. Next, the Triple-XS was purpose-built for on-road action and had a single-belt drivetrain. Now, Team Losi's much anticipated new JRX-S sedan is here. It features two drive belts, but the big news is its woven-graphite chassis (instead of Losi's trademark molded piece). This car doesn't look anything like Team Losi's previous offerings. Let's check it out.





Team Losi

RRX-S

A pro touring car with an
all-new, radical design

KIT FEATURES

CHASSIS. As far as purebred race machines go, Team Losi gets credit for pioneering the molded-chassis movement. Way back in '92, its drivers took to the track with the JRX-Pro SE off-road buggy that featured a molded-composite-plastic chassis. The competition soon followed suit. Until now, though many touring car manufacturers offered graphite chassis plates, you'd only find one under a Losi car in its prototype stage. But the mold has literally been broken, and Losi's new JRX-S touring car has a machined, woven-graphite, flat-plate chassis. This unexpected switch to graphite isn't the only feature that makes this chassis stand out. Unlike all of the current top contenders, its batteries run along the center of the chassis and are installed from the bottom. Remove two screws, and out drops your pack. If you're into touring cars, or you at least pay attention to the scene, you know the JRX-S isn't the first RC car to use this battery-cell layout; most notably, HPI's Pro 3 did, too. When it comes to blasting around a course filled with switchbacks and chicanes, the design simply makes sense (see sidebar "The science of cornering"), but the Pro 3 was plagued by an overly flexible molded (note *molded*) chassis. Team Losi wasn't about to make the same mistake, so we have a 3mm-thick graphite-plate chassis that has all of its main components keyed into place. I checked the plate, and it's perfectly flat, so no excuses: build your JRX-S right and it won't be tweaked. The chassis also features a mid-mounted motor that's also atypical of the current crop of touring cars. This setup requires three bulkheads: a molded-plastic bulkhead for each differential and a machined-aluminum center bulkhead for the motor and center shaft. Two graphite top plates connect the bulkheads.

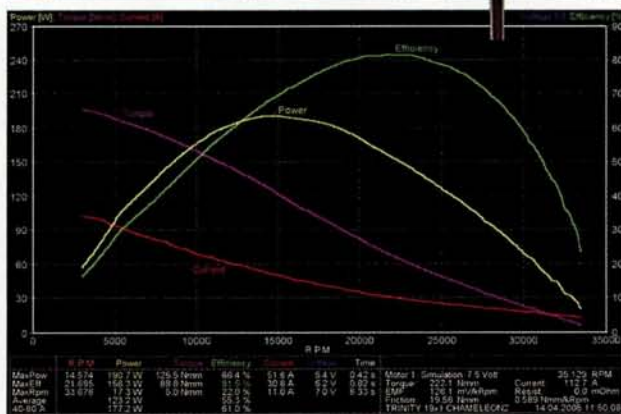
mini test

Trinity Chameleon 2 19-turn modified motor

Getting bored with stock but you aren't ready for a race mod? Check out 19-turn. This class has shown tremendous growth in the last few years—especially among touring car drivers. It's also extremely popular with the oval crowd, but they play by different rules, the most notable being that they use adjustable timing and hand-wound armatures. Perfect for touring cars, the Chameleon 2 features fixed timing, a machine-wound armature, dual ball bearings and laydown brushes. As a bonus, it also has installed capacitors. On the dyno, the Chameleon pulled just over 190 watts, compared to about 120-130 watts for a hot competition stock motor.



DYNO TEST



BUILDING AND SETUP TIPS

The JRX-S manual is simply fantastic. It gives numerous setup tips to help get you dialed but only one baseline setup. Here are world champion Joel Johnson's own building and setup tips.

SERVO MOUNTING. You'll notice that the belts run very close to many components, including the steering servo. I decided to take the bottom screw out of the right servo mount to increase the clearance between the screw/washer and the belt. Three screws on the servo are enough to hold it in place.

STEP SWAPPING. After completing step A-03, I had a difficult time getting my wrench in to tighten the screws that hold the servo on its mounts; if you use button-head screws, you'll have a problem here. I recommend that you install the servo and tighten the screws before you install the motor mount and the center bulkhead (previous step).

GRAPHITE CONDUCTS. The car's most obvious feature is its centered battery pack; this is installed from the bottom of the car. This works fine, but it does allow the possibility that you'll touch a freshly charged pack with the edge of the opening in the graphite chassis. The result would be an interesting spark show and odor. I highly recommend that you seal the edge with CA to eliminate this possibility. In fact, seal all the graphite to enhance its look and prevent it from splitting during hard impacts.

MORE CHASSIS TRICKS. After assembling the car, I noticed the following: when the differentials are in the low position, the belts touch the chassis where they exit the slot cut in it for the diff pulleys. With a Dremel tool and an 1/8-inch carbide bit, bevel the back of the front-diff-pulley slot and the front of the rear-diff-pulley slot. Look at the pulleys in the chassis, and you'll see the obvious places where you should grind. Again, seal the areas you ground with CA to give the belt a smooth edge in case it ever touches it.

SPRING SEPARATION. You will most likely never run the same springs in the front and rear because the front shock is mounted so far in on the front arm. This creates much more leverage on the shock and makes the spring feel softer. If you want the front springs to feel like the rear springs, you'll have to run much stiffer front springs. Losi chose springs with a 23-pound difference in rates.

DIFF HEIGHTS. Diff height makes a dramatic difference to a car's handling. Try a low diff position in low-traction conditions, and raise the diffs when there's a ton of traction.

ADJUSTMENTS GALORE. This car has more adjustment options than any other car on the market. When you first tune it, alter only the parts you're used to tweaking. Get the car set to your liking before you play with the adjustment options that you're less familiar with. I highly recommend that you keep the instructions handy, as they include tuning tips on how each adjustment will affect your car. As always, alter only one setting at a time, or you'll probably put your chassis setup into a tailspin.

GEARING. Read the chart given in the instructions because this car's gearing is very different from those of other chassis: its transmission drive ratio is 1.83. Don't assume that the gearing on your present chassis will also work on this new JRX-S. Losi provides a great gearing guide with "rollout" recommendations and the formulas you need to figure it all out. Use your current gearing, drive-train ratio and tire size to compare your current rollout with the gearing you should use on the JRX-S to achieve the same rollout.

SPECIFICATIONS

MANUFACTURER Team Losi

MODEL JRX-S

SCALE 1/10

PRICE \$360

Varies with dealer

DIMENSIONS

Wheelbase 10.25 in. (260mm)

Width 7.5 in. (190mm)

WEIGHT

Total, as tested 53.75 oz.

(1,524g)

CHASSIS

Type Flat lower plate with upper deck

Material 3mm woven graphite

DRIVETRAIN

Type dual-belt 4WD

Primary 37T pinion/128T spur gear

Transmission ratio 1.83:1

Final drive ratio 6.33:1

Driveshafts (F/R) Losi

Constant Drives/MIP CVDs

Differentials Ball type with D-shaped rings and plastic outdrives

Bearing type Steel-shielded ball bearing

SUSPENSION (F/R)

Type Lower H-arms with adjustable upper camber links

Shocks Fluid-filled, threaded-aluminum body

WHEELS

Type White 24mm dish

TIRES

Not included

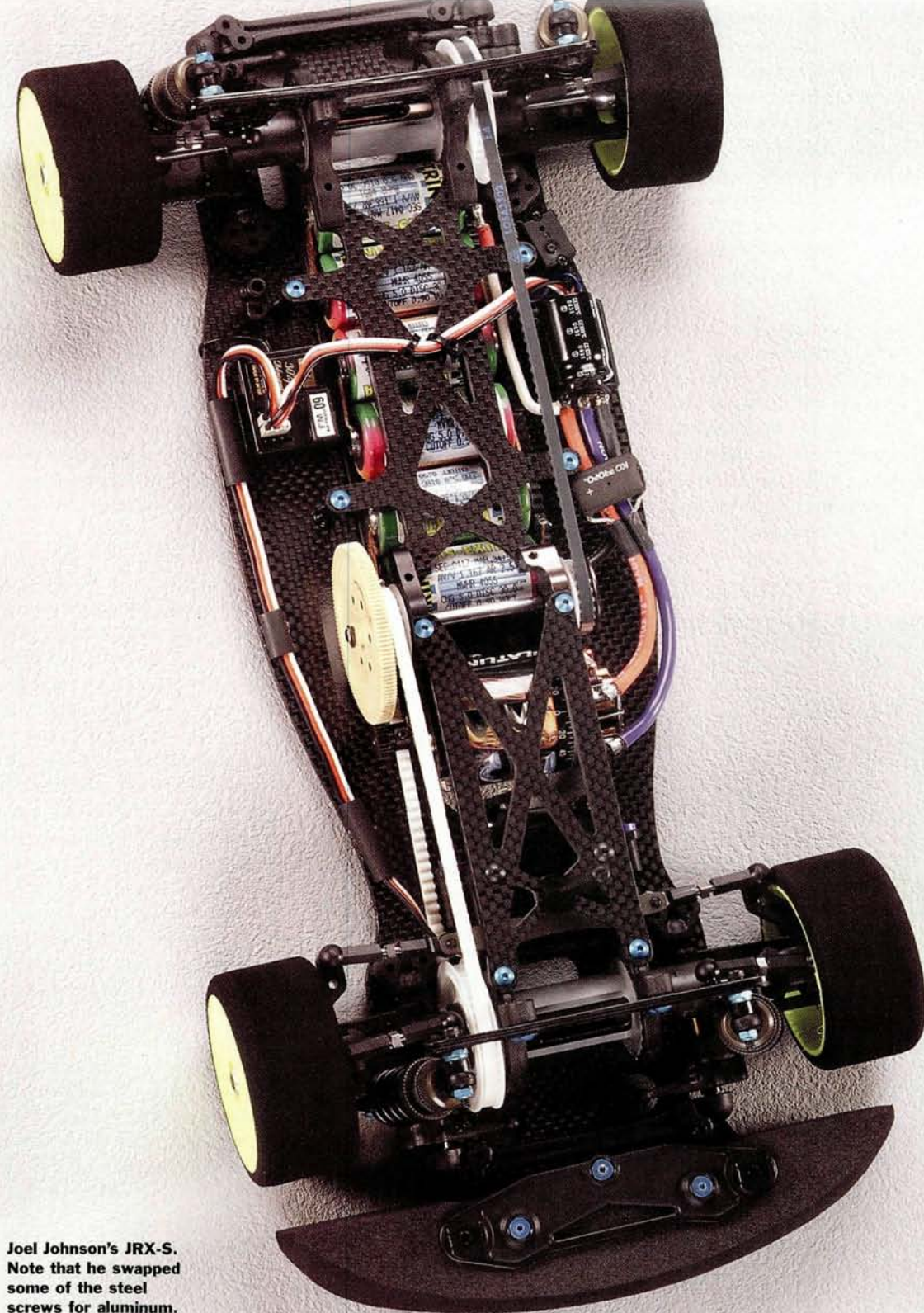
ELECTRONICS

Not included

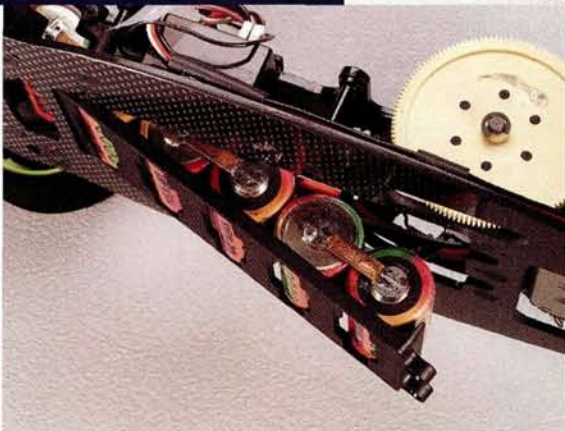
FACTORY OPTIONS

- Swaybar set (F, R)—item no. LOSA4252
- Front one-way assembly—LOSA3350
- Aluminum -2-degree pivot-pin mount—LOSA9681
- Graphite 2-degree front spindles and carriers—LOSA9756

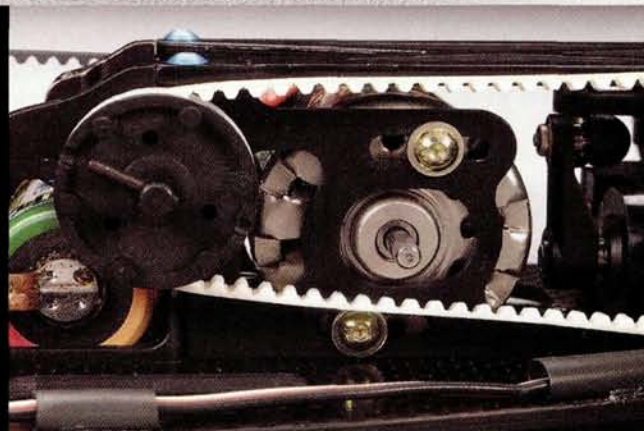
Partial list; Team Losi offers an extensive line of performance options for the JRX-S.



Joel Johnson's JRX-S. Note that he swapped some of the steel screws for aluminum.



Left: most touring cars use tape (boo!) or a body-clip-retained strap to secure the batteries. The JRX-S goes a different route: the pack is loaded in from the bottom and secured with two screws. Right: the front and rear bulkheads are composite plastic, but the center bulkhead is aluminum to make a sturdy motor mount and to help dissipate heat.



DRIVETRAIN. Losi's touring cars have had 3-belt and single-belt drivetrains, but the JRX-S has a more typical 2-belt system. The layout is straightforward: one belt runs to the front differential and the second spins the rear diff. You won't find any idlers or tensioners; instead, belt tension is adjusted using acentric (off-center) outdrive bearing supports. Rotate a bearing support and the diff moves closer to or farther away from the center shaft, decreasing or increasing tension as it goes. With the battery cells along the center, the belts must be positioned pretty far away from the center, and long differentials are a necessity. The JRX-S diffs are pretty damn cool. OK; try to stay with me now. Each diff consists of three main parts: two molded outdrives and one, very long, machined-aluminum diff tube. One outdrive is keyed to fit on the end of the aluminum tube to form a diff half, and the other outdrive makes up the second diff half. With the diff rings and balls sandwiched between the halves, you have a complete differential. The setup looks pretty slick. The outdrive material is a rigid composite plastic and is stout enough not to require rings to keep the pieces together; they can also accept drive axles with pins or bearings. The diff uses D-shaped diff rings for slip-free, consistent action.

The JRX-S's rear drive axles are conventional constant velocity joints (CVDs), but up front, Losi incorporates an entirely new

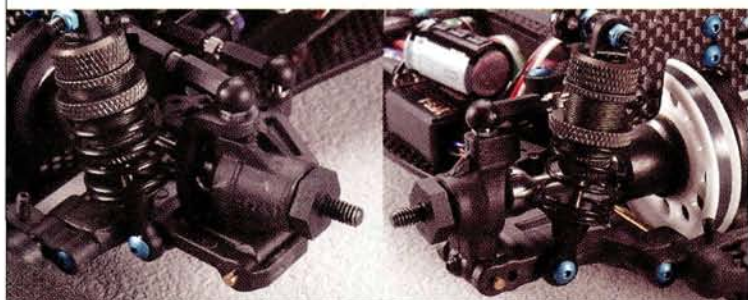
design. Similar to a constant-velocity joint on a full-size car, Losi's new "Constant Drive," or LCD, uses two joints in tandem. This extremely flexible system eliminates driveline binding when going through and exiting corners.

SUSPENSION AND STEERING. The JRX-S uses a short suspension-arm setup. Not only are these arms stronger, but they're also more rigid and will help to reduce speed-robbing chassis roll. Sounds like a good design for a touring car. Since the JRX-S is an expert-level machine, its suspension arms and many of its other molded pieces are graphite composite. No need to wait for the "pro" version with all the cool parts; they're already here. Losi is well known for its bottom-loaded shocks, which are considered to be among the best in the business. A surprise on the JRX-S is its all-new, top-filled shock absorber. Like many other top-filled shocks, these have an internal bladder under their two-piece caps to compensate for volume displacement as the piston travels through the cylinder. O-rings are loaded in from the bottom, and you can use single or double O-rings. The shock shafts and the hinge pins are made of Losi's Ti-Nitride.

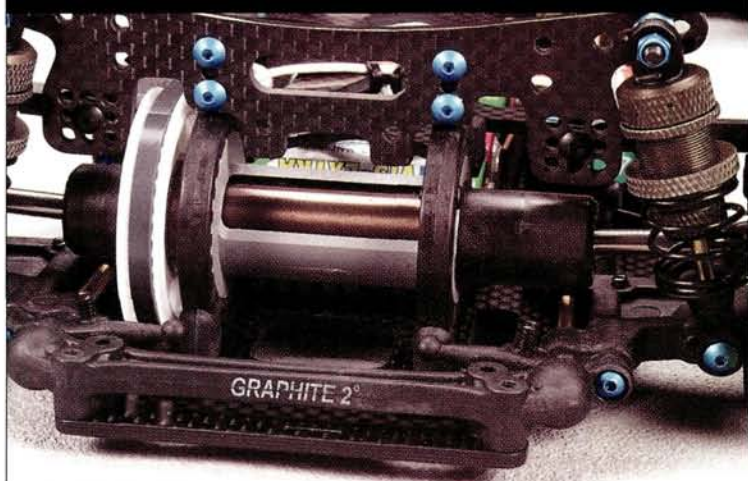
When news of the JRX-S first hit the streets (read "Internet"), it was rumored to have been designed only for extremely smooth, purpose-built paved tracks and indoor carpet tracks. Like much of the stuff you'll find on the Web, that tidbit was bogus; in fact, the JRX-S has a sophisticated, innovative roll-center system that makes it just as at home burning rubber on a parking lot and wearing down foam on a high-grip carpet track. The differential, pivot blocks and shock towers can all be raised or lowered to adapt the roll center to suit the differing surfaces. On other touring cars, the inner and outer camber-link positions can be altered to fine-tune roll center, but moving the diffs, pivot blocks and shock towers allows more extreme adjustments and means a car that's more versatile overall—"two cars in one," as Losi says.

To make room for the mid-mounted motor and to keep the mass as central as possible, the steering servo is mounted in a reversed position directly behind the front diff, and the dual-bellcrank system is suspended from the upper deck. It's worth noting that there's no provision for any sort of servo-saver.

BODY, WHEELS AND TIRES. I was surprised that Losi includes a body. Full-on race car manufacturers usually skip the body for on-road machines, so the Skoda2 is a welcome bonus. I had Bill Zeger of Zegers R/C Grafixx lay down my racing colors on the clear shell. Though Bill didn't need them, Losi includes window masks to make painting for us mere mortals much easier. Losi also includes a set of white dish rims but leaves tire choice up to you.



Above left: the front suspension uses a vertical outer camber-link mount. Note how short the lower arms are. The hinge pins are held with setscrews, so E-clips are strictly optional. Above right: the rear uses the more typical MIP CVDs. Below: the JRX-S needs ultralong diffs because its battery cells run along the middle of the chassis. This atypical diff design doesn't hinder diff performance.



LIKES

- › Highly adjustable.
- › Fantastic handling with little effort.
- › Unique design.

DISLIKES

- › Only one baseline setup is given in with instructions.
- › Some hand-fitting is required.

THE COMPETITION

VEHICLE >> REVIEWED
 Associated TC4 >> 3/05
 Corally RDX >> Not reviewed
 HPI Pro 4 >> 6/04
 Schumacher Mi2 Carbon >> 10/04
 Tamiya TB Evolution IV >> 5/05
 Tamiya TRF 415 >> 11/04
 XRAY T1FK >> 8/04
 Yokomo SD SSG >> 9/03

YOU'LL NEED	WE USED
Transmitter and receiver	KO Propo EX-10 Helios
ESC	KO Propo VFS-1 Pro
Steering servo	KO Propo PDS-2143FET
Motor	Trinity Chameleon 2
6-cell battery	Trinity GP3300 NiMH cells
Charger	Novak Millennium Pro
Racing tires	GQ touring car foams (black/gray and gray)





The science of cornering

Team Losi went to great trouble to place the motor, battery, and steering servo on the JRX-S's centerline. Why bother, when it's so much easier to place the battery on the side of the chassis or use a saddle pack? The answer is polar moment of inertia, but rather than bore you with a textbook definition, let's cut to the examples. Imagine you're holding a bowling ball by your side, and you're rotating it with your wrist. It's heavy, but since its mass is in a compact ball (low polar moment), you can rotate it back and forth easily. Now imagine that the same bowling ball is sliced in half, and the halves are on opposite ends of a broomstick (high polar moment), which you're holding in the middle. Although the total weight hasn't changed (it's a magic, weightless broomstick, OK?), it's much more difficult to rotate the split bowling ball, and once moving, it's more difficult to stop. The same forces are at work for a touring car as it turns left and right on a roadcourse. If heavy components can be moved closer to the car's center, less energy is required to initiate a turn or change direction. The tires and motor don't have to work as hard, the car can get through turns faster, and lap times decrease. And that's why Team Losi went to so much trouble to line up the motor, battery and steering servo on the chassis' centerline: so you can go faster.

PRO SETUP

Todd Hodge's U.S. Indoor Champions carpet setup

	Front	Rear
Camber	1.5 deg. neg.	1.5 deg. neg.
Caster	4 deg.	—
Roll center	Low	Low
Droop	4.3mm	5.6mm
Toe	0 deg.	2.5 deg. in
Ride height	3.3mm	3.6mm
Shock fluid	50WT	40WT
Shock piston	60	57
Shock spring	60	25
Shock bladders	Losi white	Losi white
Shock mount (tower)	1	2
Swaybars	—	0.055 in.
Tires	TRC Cyan	TRC Magenta
Tire diameter	56.2mm	56.6mm
Diff type	diff	diff
Gearing	128/25	
Center drive	Spool	

Matt Francis' IFMAR Worlds paved setup

	Front	Rear
Camber	1 deg. neg.	1 deg. neg.
Caster	6 deg.	—
Roll center	High	High
Droop	2.5mm	7mm
Toe-in	0 deg.	2.5 deg. in
Ride height	4.5mm	4.5mm
Shock fluid	60WT	40WT
Shock piston	58 drilled	57
Shock spring	35	17.5
Shock bladders	Losi white	Losi white
Shock mount (tower)	1	2
Swaybars	—	—
Tires	CS-27 handout	CS-27 handout
Diff type	Spool	Diff
Gearing	128/28	
Center drive	Spool	



JOEL'S TIP

Instead of gluing the steering servo's long lead directly to the chassis or taping it (that isn't secure enough), Joel uses silicone glue to attach sections of heat-shrink tubing that he slides over the lead. This eliminates any chance that the wires will hit the spur gear, it looks neat and professional, and the tubing is easy to removed without damaging the servo lead.



JOEL'S TIP

To prevent the positive battery wire from falling onto the rear belt, Joel used stiff, solid-copper household wire. This wire doesn't droop so it can't rub against the belt.

PERFORMANCE

The JRX-S is designed to excel on indoor carpet and outdoor paved tracks, so we tested it on both surfaces.

With 19-turn power, the JRX-S has exceptional acceleration and rips down any straightaway in a hurry. It pulled hard and tracked perfectly straight. I've driven shaft cars for so long that the absence of torque steer surprised me; I didn't have to give the car any steering input as I clamped the trigger. There wasn't any belt skip, even under full rip, and there wasn't a noticeable lag in acceleration. The drivetrain spins freely, and that shows as the car pulls down straights and rips out of corners.

Losi includes a very neutral spring setup: 35-rate springs up front and 12.5 in the rear. This is probably a good, easy-to-drive starting point for pavement, but it wasn't quite right for carpet. With stiffer springs all the way around, the JRX-S will no doubt be right on the money. Keep in mind that with this suspension design, your front and rear spring rates will not match or even be close. The front arms put a lot more leverage on the springs, so they need springs

with a much higher rate than the rear arms do. If you race in the stock class on a paved track, the stock spring setup might be dialed, but it will probably be too soft for 19-turn and mod racing on any surface.

Even without a spring swap, the JRX-S turns very well, and I was able to get it to break free just enough to scoot around even the tightest corners without slowing it down too much. And even without the benefit of the optional swaybars, the JRX-S stayed level in the corners and showed the crisp, agile handling I expect from a plate-chassis car. I was very impressed by how level the JRX-S stayed level even when cornering hard.

On the parking-lot track, I had the JRX-S up to full boogie for long stretches; it was easy to control at full speed and didn't wander or feel twitchy. With front and rear diffs, braking was uneventful; I jammed on the binders as hard as I liked without losing control or hearing belt-skip. After a day of running outside, the diffs felt very gritty and needed a complete rebuild. This is just part of the game with serious race machines.

JOEL'S Driving Impression

"Joel's Bench" columnist and on-road legend Joel Johnson was dialing in his own JRX-S as I was completing my review, so I invited him to share his thoughts on the new car:

ACCELERATION. The drivetrain is extremely free. The JRX-S tracks like an arrow down the straights, and the steering system seems solid.

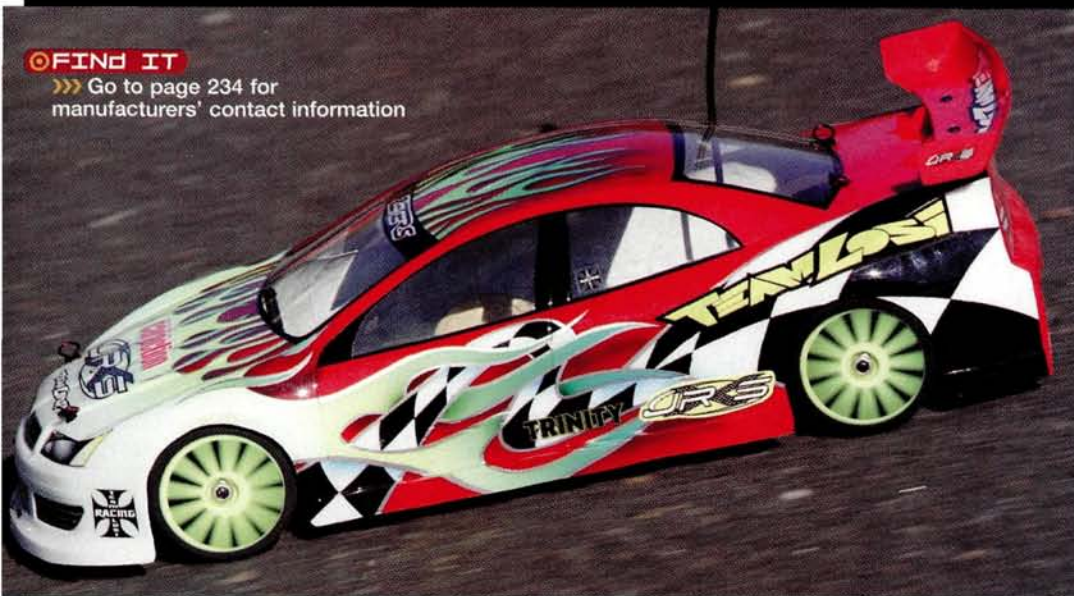
BRAKING. The stability under braking is outstanding. The car's centered mass really makes it track straight while it's decelerating, and it makes gathering up a slide much easier than with traditional designs.

CORNERING. Cornering is flat, and it's easy to hold a nice consistent arc through turns. The car exited turns nicely and felt solid on power. It does drop its nose noticeably when off power, but it doesn't roll from side to side much. It looks smooth going around the track.

TUNING. I was impressed by how well the JRX-S reacted to changes in camber-link points and to roll-center adjustments. Every change made it act as predicted and didn't throw it off. Small setup changes made small but noticeable differences on the track. The JRX-S rotates well, and I got it to rotate better by raising the rear roll center to "unhook" the rear. This was the best change I made all day for the small track I tested it on.

FIND IT

>>> Go to page 234 for manufacturers' contact information



THE VERDICT

With its highly adjustable roll center, Team Losi claims that the JRX-S is like two cars in one, but it doesn't try to be all things to all people. It isn't designed for beginners; Losi labels it an "expert" touring car, but if you're an experienced racer, you

should be able to assemble it properly and get the most out of it. If you've never built an RC car, this probably isn't the one for you. The touring car market has heated up, and Team Losi now has an offering that can take on all comers. ■

RATINGS

Instructions ●●●●●●●●●●

The instructions are excellent, but I'd like more than one baseline setup.

Parts fit & finish ●●●●●●●●●●

Minor hand-fitting required here; overall parts quality is topnotch.

Turn-in ●●●●●●●●●●

Out of the box, the stock springs make for a subdued ride, but the potential is totally there.

Corner speed ●●●●●●●●●●

With diffs front and rear, the JRX-S gives up some corner speed (compared with a one-way setup).

On-power steering ●●●●●●●●●●

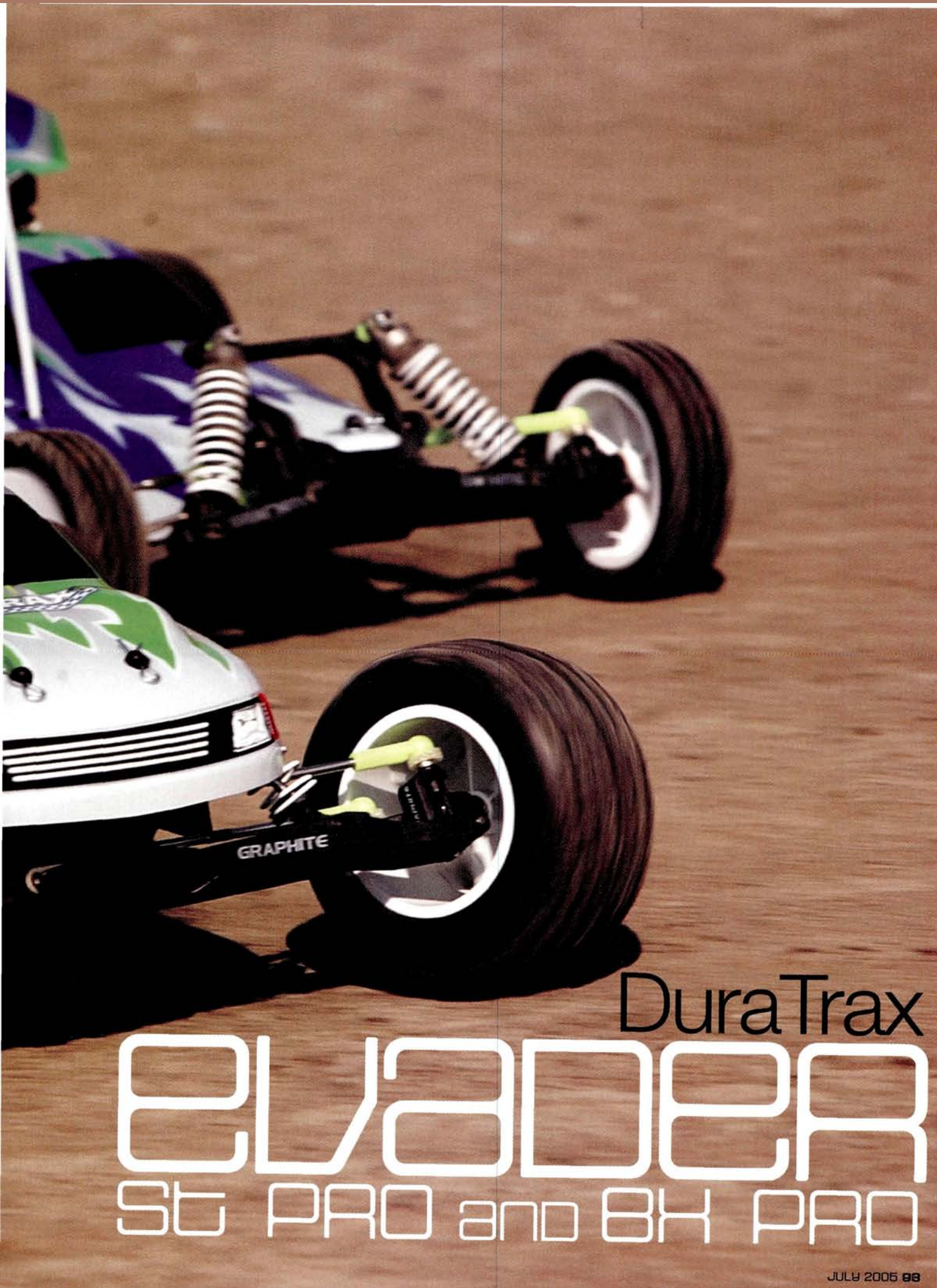
Like most 4WD touring cars, it understeers, but that's easy to dial out.

Best buyer>>> Experienced racers who want something different from the rest.

DuraTrax's off-roaders go Pro

When DuraTrax first released its Evader series, we took notice of the threaded-aluminum shocks (an especially nice touch on an RTR), and the 1-year Stress-Tech guarantee also really got our attention. A warranty against defects in materials and workmanship is expected, but DuraTrax's promise to replace any Stress-Tech parts that fail for any reason was an industry first. Needless to say, DuraTrax did well with the Evader series, and now the big D has decided to one-up itself. Meet the Evader Pros. This time, the shocks are hard-anodized (as are the other aluminum pieces), and much of the chassis and suspension is now made of molded graphite. DuraTrax threw in a 15-turn Team Orion modified motor and an IntelliSpeed speed control that can handle 12-turn motors. And if that isn't enough, the Stress-Tech Guarantee is still offered, and a Futaba computerized radio is included to control the whole thing!





DuraTrax

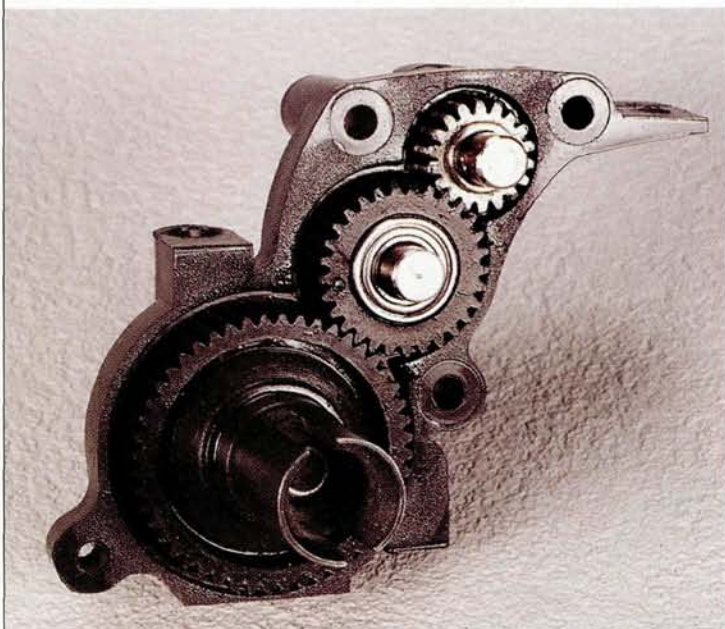
E-FLITE

ST PRO and BX PRO

KIT FEATURES

CHASSIS. The ST and BX Pros feature the same chassis design as their predecessors, but this time, most of the chassis and suspension components are molded of a graphite-reinforced composite instead of DuraTrax's Stress-Tech plastic. As any racer will tell you, this is a nice performance booster because it increases the chassis' rigidity and decreases weight. To ensure that the Evader Pros wouldn't be mistaken for the run-of-the-mill, all-plastic versions, DuraTrax labeled each part with a "Graphite" logo à la Team Losi. If you aren't familiar with the DuraTrax Evader series, the electric versions use the typical buggy and stadium-truck chassis configuration. A deep channel that runs down the center of the chassis accommodates the battery, and a separate plate (hard-anodized aluminum on the Pros) mounted on the rear of the chassis supports the transmission.

DRIVETRAIN. The only change DuraTrax made to the original Evader's drivetrain for the Pro series was to add a hard-anodized slipper clutch and motor-mount plate. As before, the 3-gear transmission is low-profile but not slammed, and it spins entirely on ball bearings. In fact, the ST and BX Pros are completely ball-bearing supported, as were the previous versions. Steel drive axles with constant-velocity joints are used on both the ST and BX, and they feature ball differentials. The slipper setup is easy to adjust, and because it uses a single slipper pad, swapping out spur gears doesn't mean you have to reset the slipper adjustment.



Above: the inside view of the 3-gear transmission shows a typical layout for an off-road truck or buggy.

Left: the DuraTrax IntelliSpeed ESC can handle 12-turn modified motors. Reverse can also be locked out, so it's suitable for racing as well.

INCLUDED ELECTRONICS & ACCESSORIES

FUTABA MAGNUM 2PL TRANSMITTER

This is a lot more radio than I'd normally expect to see included with an RTR. The computerized transmitter features 10-model-memory settings and supereasy, single-button navigation. Even if you eventually outgrow the Evader Pro, you'll get many years of use out of this transmitter. The

allowed. You also have the option to program in three reverse delays (0, 1 and 2 seconds) to protect the Evader's drivetrain. It will automatically shut down if temps get too high, and it even features ABS. The 2PL transmitter has ABS as well, so use the control's ABS or the transmitter's, but not both.



2PL is also one of the most comfortable radios on the market, and it has great features that include model naming, digital trim, dual rate and end-point adjustment. The 2PL even has an adjustable ABS function with three pulse settings: fast, middle and slow.

FUTABA S3003 SERVO

This is Futaba's standard servo. It features plastic gears and 57 oz.-in. of torque. It worked fine in our test vehicles, but most will eventually want to upgrade to a more powerful, metal-gear servo.

DURATRAX INTELLISPEED 12T REVERSING SPEED CONTROL

Like the Futaba radio, this speed control offers more than I'd expect with an RTR. It's a sport-level unit, but it can handle a 12-turn motor—impressive! It also allows you to lock out reverse, which is great for racing when reverse isn't

TEAM ORION HAVOK 15-TURN MODIFIED MOTOR

The Havok is a huge improvement on what was offered in RTRs a few years ago, and it puts out enough get-up-and-go to get you started. It has fixed timing and isn't rebuildable, so run it until it dies. If you plan to race, a stock motor would be a good match for the Pro, but since the speed control can handle a 12-turn, it would be hard to resist installing one of those. As far as modified motors go, the Havok is a modest performer, but it comes free with the Evader Pro, so who's complaining?

ASSORTED TOOLS AND SHOCK PISTONS

DuraTrax includes 4-way turnbuckle and hex wrenches with the Pros and also throws in a variety of shock pistons to get the Evaders dialed in.

SPECIFICATIONS

MANUFACTURER DuraTrax
MODELS Evader BX Pro and
 Evader ST Pro
DISTRIBUTED BY Great Planes
 Model Distributors
SCALE 1/10
PRICE \$260
Varies with dealer

DIMENSIONS

Wheelbase BX/ST 11 in.
 (280mm)/11.6 in. (295mm)
Width BX/ST 9.9 in. (251mm)/
 13 in. (330mm)

WEIGHT

Total, as tested BX/ST 58 oz.
 (1,644g)/67 oz. (1,899g)

CHASSIS

Type Molded semi-tub
Material Graphite composite

DRIVETRAIN

Type Enclosed gearbox
Primary 15T pinion/88T spur gear
Transmission ratio 2.66:1
Final drive ratio 15.6:1
Driveshafts Steel universals
Differentials Ball type with
 steel outdrives
Bearing type Metal-shielded
 ball bearing

SUSPENSION

Type (F/R) Lower graphite
 A-arm/adjustable steel
 camber link
Shocks Bottom-loaded, threaded,
 hard-anodized aluminum body

WHEELS

Type White plastic dish

TIRES

Type (F/R) Pro-Line ribbed/Bow Tie

ELECTRONICS

Transmitter/receiver Futaba
 Magnum 2PL AM/Futaba R142JE
Servo Futaba S3003
Speed control DuraTrax
 IntelliSpeed 12T
Motor Team Orion Havok
 15-turn modified
Battery not included

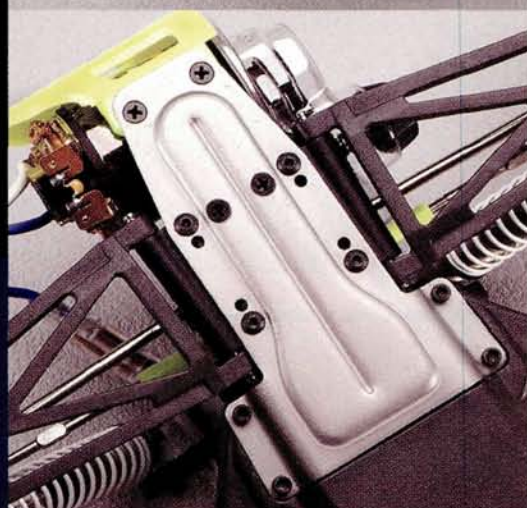
FACTORY OPTIONS

- 20-tooth pinion—item no.
DTXC8350
- Swaybar sets (F/R)—
DTXC9576/ DTXC9577
- Front shock springs, medium
yellow (2)—DTXC9230
- Front shock springs, hard green
(2)—DTXC9231
- Titanium kingpin set (2)—
DTXC8206

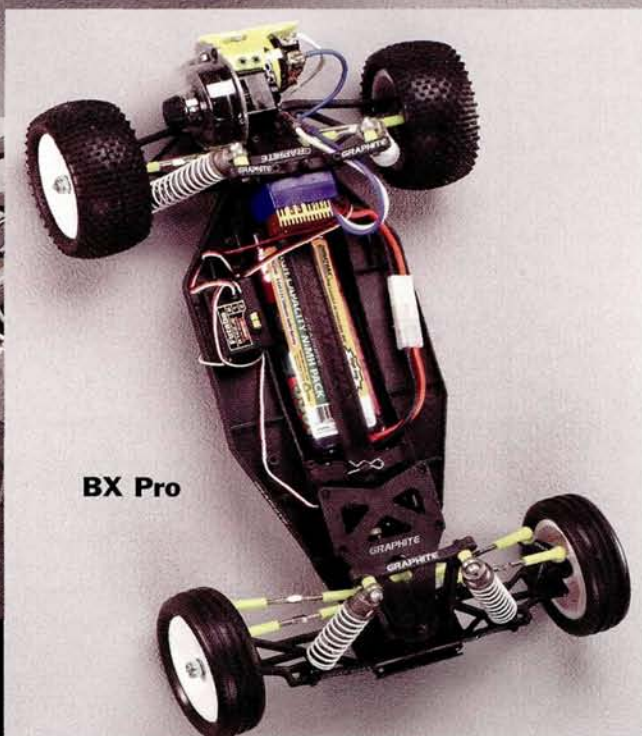
Partial list; additional options available



ST Pro

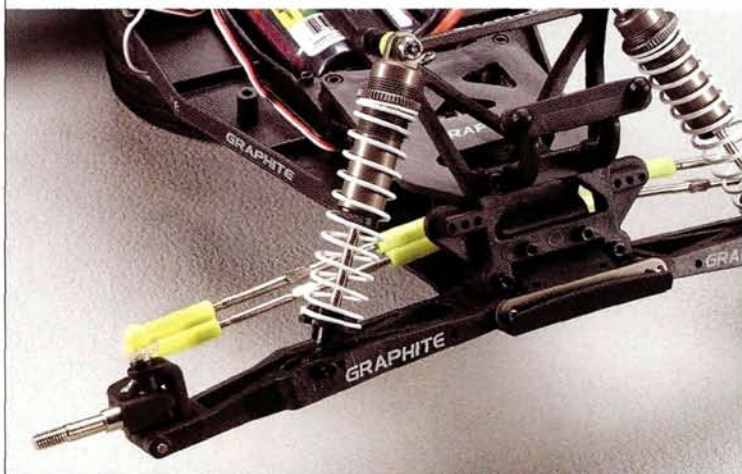


Above: the extra holes in the bottom of the rear plate allow easy rear toe adjustment. You can adjust rear anti-squat by placing washers under the rear suspension-arm mounts.



BX Pro

SUSPENSION AND STEERING. Among the coolest features on the original ST and BX Evaders were the Rapid-Tune shocks that featured threaded-aluminum bodies. These are back on the Pros, but the dampers are now hard-anodized. Almost everything else is the same but, like the chassis, the suspension arms and shock towers now sport the Graphite badge. DuraTrax increased the



The threaded-body aluminum shocks are hard anodized on the Pro. They're loaded from the bottom and come filled with 20WT fluid.

adjustability of its Evaders when they went Pro. With the new, aluminum, rear chassis plate, you can now alter rear toe. No parts have to be swapped out to make this adjustment; just move the screw locations of the rear arm mounting blocks to dial in 0, 1½, or 3 degrees of rear toe. Anti-squat and wheelbase are also adjustable. DuraTrax even includes a selection of optional pistons so you can fine-tune the suspension.

The steering setup on the Pros uses the typical dual bellcranks and built-in servo-saver design. The bellcranks feature optional mounting holes for the steering links; this allows you to tune the Ackerman, which influences how aggressive the steering will feel. Both the ST and BX feature steel turnbuckles and plastic ball cups. The entire platform is very solid but is slightly out of date compared with today's crop of top-level racing machines.

BODY, WHEELS AND TIRES. If painting isn't your thing, you'll appreciate that not only does DuraTrax take care of this chore for you, but it also does a fine job. The Pros feature sharp, multicolored, silk-screened bodies with blacked-out windows. An included decal sheet allows you to add a personal touch.

Although DuraTrax could have gotten away with any old rubber, it has stayed true to the Pro moniker and includes Pro-Line racing kicks with these RTRs. Wide-ribbed tires are spec'd up front, and Bow Ties are found in back. This very versatile setup works great for screaming up and down the street and bashing around the backyard, and it will also get you around most race-tracks just fine.

TUNING

STAY-PUT SPEED CONTROL

Not long into testing, both Evaders' speed controls came untaped and were bouncing around under the body shells. To keep them in place, buy thicker servo tape (stick with the RC-specific stuff) at a hobby store. Clean the speed control and shock tower with rubbing alcohol before you reinstall the speedo to the new tape.

GLITCH PREVENTION

Although graphite components are excellent performance boosters, they can also be a source of major radio interference if the receiver antenna touches the chassis. To prevent glitches, run the exposed section of antenna through a section of heat-shrink tubing. You don't need to shrink it down; leave it as is, and it will insulate the antenna.

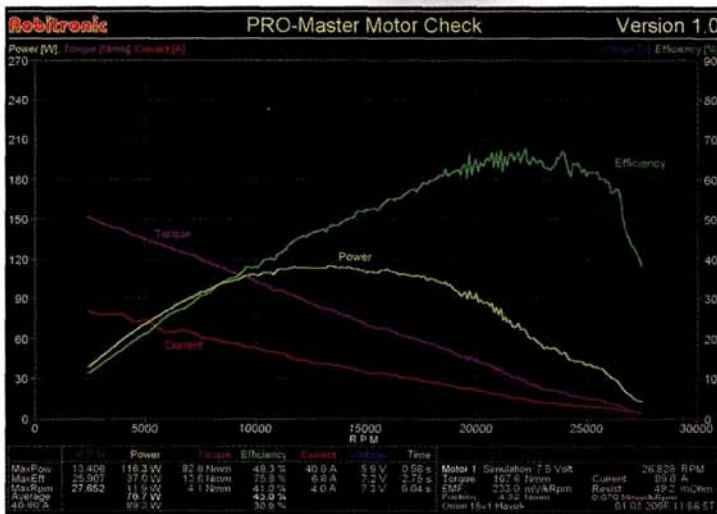
CORRECT CAMBER

The Pros are well put together, and if you don't plan to race, you can leave them as they come out of the box. To be able to lay down some consistently fast laps, though, set about 1 degree of camber on each wheel.

IMPROVED STEERING

You don't always need a wrench to tweak handling. To make the Pros easier to drive without oversteering (spinning out), dial down the dual rate on the 2PL transmitter. This adjustment really helps the BX.

Both of the Pros feature Team Orion's Havok 15-turn motor. It's a mild performer compared to typical 15-turn mods, but it's much stronger than the closed-endbell, 20-turn units most RTRs use—as the dyno shows (below).



LIKES

- › Loads of graphite parts.
- › Computerized radio.
- › Pro-Line tires.
- › 1-year Stress-Tech guarantee.

DISLIKES

- › Soft front suspension.
- › 15-turn motor should be faster.
- › Speed control pops off easily.

THE COMPETITION

EVADER ST
& BX PRO

VEHICLE >> REVIEWED

- Team Associated B4 RTR Plus >> 5/04
- Team Associated T4 RTR Plus >> 4/05
- Team Losi Triple-XT Sport II >> 4/05
- Traxxas Rustler >> 5/95
- XTM X-Cellerator EP RTR >> 2/05

YOU'LL NEED

Stick pack
Charger

WE USED

DuraTrax 3300
DuraTrax IntelliPeak Ice



FIND IT

>>> Go to page 234 for manufacturers' contact information

PERFORMANCE

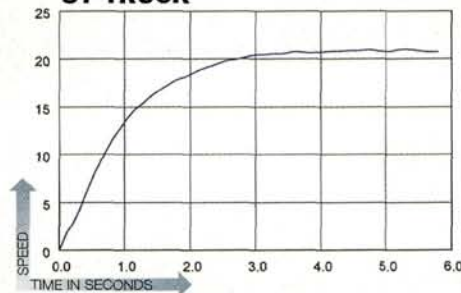
Getting the Pros up and running takes hardly any time at all. Apply the stickers while you're charging a battery, and you can hit the dirt in about half an hour. I wasted no time seeing what the Pro BX was all about when I took the graphite-adorned buggy with me to a trophy race I was attending at Hill Top R/C and Hobby in Ashuelot, NH. Hill Top's indoor track gets pretty rutted and has a tight, somewhat technical layout. On this trip, I was greeted by multiple crossover jumps where you had to launch a double over a section of the track—fall short, and the vehicle plopped down right in the way of oncoming traffic. Mechanically, the BX worked flawlessly, and I was able to get a lot of practice. But I discovered two issues that prevented it from working well on this particular layout. First, the front springs were far too soft to work well with the rear springs. As a result, the BX was a little tail happy and proved to be too much of a handful to pilot in traffic and was equally difficult to set up for jumps. Second, the Havok motor and stock 15-tooth pinion prohibited the BX from working up enough speed to consistently clear the big crossover jumps; this was especially true if I had gotten a little out of shape on the approach. With minor changes to the stock setup and the addition of a competition stock motor, I'm certain the Evader Pros could hang on the track.

When out bashing around, neither the stock springs nor the gearing proved to be problematic at all. Although I might swap out the pinion for a 20-tooth to get more top speed, the run time with the 15-tooth was excellent. I frequently enjoyed 10-minute sessions with the BX and ST. In stock form, the strong acceleration and top speed of 20mph won't disappoint RC newcomers, but most will be looking to get a little more top end. The included 15-turn motor gets the job done, but it's significantly slower than typical mod motors with the same number of turns. Blasting around the yard, the ST and BX worked great and were pure fun. The ball differentials allowed the Pro Evaders to corner smoothly, and the generous ride height got even the smaller-tire buggy over most obstacles. I did frequently lose the wing when bouncing the BX around, but a setscrew in the shock tower to clamp the wing wire in place will fix that in two minutes.

The BX and ST easily launch off jumps of any size, and with its bigger tires, the ST responds well to throttle or brake inputs while in the air. The BX is smaller and more nimble than the ST, but the latter is easier to drive. By virtue of it being wider and having bigger tires than the BX, the ST is more forgiving and harder to spin out. Throughout my testing, the Rapid-Tune shocks worked great, and I consider them among the best, if not the best, offered on any electric RTR.

RAID TESTING

ST TRUCK



Distance (in feet) traveled in:	0-132 ft. time	Speed at 132 ft.
1 SEC. > 10.78	5.25 SEC.	20.98 MPH
2 SEC. > 34.92		
3 SEC. > 63.69	Time to top speed	Top speed
4 SEC. > 93.69	5.25 SEC.	20.98 MPH
5 SEC. > 124.4		

BX BUGGY



Distance (in feet) traveled in:	0-132 ft. time	Speed at 132 ft.
1 SEC. > 12.31	5.21 SEC.	20.24 MPH
2 SEC. > 37.78		
3 SEC. > 66.64	Time to top speed	Top speed
4 SEC. > 96.05	4.67 SEC.	20.26 MPH
5 SEC. > 125.7		

The IntelliSpeed ESC handled the Orion Havok 15-turn motor with ease and never showed any signs of overheating. Ironically, most motors overheat because of a pinion—that's too large, but I believe the stock 15-tooth pinion was so small that it caused the Orion motor to run hotter than it should. My suspicion was confirmed when I swapped in a 20-tooth gear and the motor ran slightly cooler.

RATINGS

Instructions	●●●●●●●●●●	⊞	Excellent manual with great illustrations and instructions, but a setup sheet would make it perfect.
Included electronics	●●●●●●●●●●	⊞	Fantastic radio. The 12-turn-capable ESC is great; metal-gear servo would make this bombproof.
Parts fit and finish	●●●●●●●●●●	⊞	Well assembled and of good quality, put the speed controls popped off easily.
Turn-in	●●●●●●●●●●	⊞	Entering corners isn't bad, but the suspension is too soft and mushy in front for race track handling.
Corner speed	●●●●●●●●●●	⊞	Though it's better on the ST, corner speed suffers because of the soft springs.
On-power steering	●●●●●●●●●●	⊞	On the track, the BX is more prone to spinning as it comes out of corners than the ST is.
Braking	●●●●●●●●●●	⊞	The IntelliSpeed provides excellent braking action; the Pros are very controllable while on the binders.
Bump handling	●●●●●●●●●●	⊞	The Pros get tossed around a bit, but their plush suspensions easily soak up most bumps and jolts.
Jumping	●●●●●●●●●●	⊞	Even big-air jumps are no problem for the Pros.

Best buyer>>> Beginning to intermediate racers, or anyone who wants racing features.



“The BX and ST easily launch off jumps of any size, and with its bigger tires, the ST responds well to throttle or brake inputs while in the air.

THE VERDICT

DuraTrax has two solid performers with its BX Pro and ST Pro vehicles. With high-quality chassis components and the superb Futaba Magnum 2PL radios, they are an excellent value. Although minor tweaks might be needed when you hit the track, there isn't any reason why the Pros won't be competitive in low-key club racing. They might be slightly outdated compared with the latest and

greatest offerings from the top racing companies, but they still have all the features—and then some—that are needed in an off-road racer. Bottom line: gobs of graphite parts, threaded shock bodies, hard-anodized aluminum goodies and a computerized radio make the DuraTrax Evader Pros well worth the money. ■

Academy's new **SB Pro Carbon 4WD buggy** is here to show other four-wheelers that it means business. The Pro is an upgraded version of the standard SB Sport that's specifically designed for competition. The Sport's shaft-drive, double-deck plate chassis layout remains unchanged, but the Pro model is loaded with purple-anodized aluminum parts, graphite chassis plates, a slipper clutch, machined-aluminum motor mount and other mods that bring it up to full race specs. The only thing you won't find is a full-race price; at about \$250, the SB Pro could be electric off-road racing's best buy.



Academy's popular sport buggy goes Pro with a full graphite makeover





MRC Academy

SB PRO CARBON

KIT FEATURES

CHASSIS. The chassis is a slab of 2.4mm graphite with a two-piece upper deck made of the same material. The lower deck is slotted for 6 cells, and a graphite battery strap holds them. Most Pro owners will opt for side-by-side cells, but the chassis can also accept a stick pack. Anodized standoffs join the upper and lower decks, and the motor plate and gearboxes lend additional support. The completed chassis isn't as stiff as those of the molded-chassis competition, but it is acceptably stiff, and a little flexibility can actually improve traction on slippery surfaces.

DRIVETRAIN. The Pro's drivetrain is very TC3-like with an aluminum-tipped carbon main shaft driving the front and rear differentials directly via bevel pinion gears. The diffs use steel outdrives and have a "waisted" design to save a few grams. The diff bearings and the large inboard bearings in the hub carriers are rubber-sealed, while metal-shielded bearings are used for the smaller outboard bearings. A dual-pad slipper clutch is standard, but it can't be adjusted once installed. The car can also be built with a direct-drive setup, but we suggest that you stick with the slipper clutch. Steel, CV-style front and rear universal driveshafts complete the drivetrain and are capped by 12mm aluminum drive hexes.

SUSPENSION AND STEERING. The suspension is a well-proven, lower A-arm and upper camber-link design front and rear. The arms are very beefy and can be used on either side of the car, so you won't end up with a spares box full of one-sided arms. Five arm-mounting blocks are included in the kit, and that gives you five choices for front kick-up and rear anti-squat settings. The hinge pins are tipped with Delrin balls so they can pivot in the arm mounts, and Academy provides spare balls so you don't have to worry about taking them out and reinstalling them when you change blocks—a very nice touch! The suspension moves freely straight out of the box; no hand-fitting required.

Academy's Pro Damper shocks feature a double O-ring setup and a bladder design, and they're built for you—another nice touch. The shocks have rubber shaft wipers to prevent dirt from contaminating the O-rings, so the shocks will last longer between rebuilds and stay more consistent. The springs included in the kit are on the soft side, but Associated springs are a direct fit, and

BUILDING AND SETUP TIPS

MOTOR-MOUNT FIX

I installed the motor mount but could not tighten it completely. I thought the screws provided were too long, but they were correct according to the instructions. Deepening the mounting holes with a drill bit let the screws thread in fully.

CASTER-BLOCK SPACER

There's a gap between the front arm mount and the chassis. If you tighten the screws in the block too much, the mount will bow. I used 0.06-inch spacer to fill the gap.

LOOSE DRIVESHAFT

The main driveshaft floated between the drive cups more than I liked, so I inserted a 0.022 spring into each drive cup to keep the shaft centered. You could also use O-rings to do the job.

DIFF-CASE SHIMMING

Take your time when you assemble the gearboxes, and check the gear mesh frequently. Shims are included to space the diffs' ring gears closer to or farther from the bevel pinions. When the action feels smooth without excess play, button up the gearboxes, and then check the action again.

GEAR PREP

The molded diff and pinion gears are plugged, and their centers must be removed before they can be installed. The instructions illustrate this but don't suggest what to use for an anvil and punch. I used the 5.5mm end of the included box wrench as a punch and an outdrive bearing as an anvil to prep the diff gears. For the pinions, I used a bevel-gear shaft as a punch and a center joint cup as an anvil.

Team Losi springs will fit if you bend the top and bottom coils inwards a little.

The steering bellcranks incorporate an adjustable servo-saver and offer two Ackerman settings; they sit in bronze bushings pressed directly into the chassis. I was concerned that the steering would be very tight or that there would be tremendous play in the bellcranks, but neither was the case; the bellcranks turn freely and without excess play. Academy got those tolerances just right!

BODY, WHEELS AND TIRES. The Pro shares its super-low body with the SB Sport. It's attached to a Lexan undertray with Velcro® to seal out dirt, but you'll still have to shake out sand between runs because the front tires tend to roost into the bellcrank openings.



Left: a purple-anodized aluminum motor mount helps keep things running cooler.

Right: the ball diffs use steel outdrives, and Academy makes an effort to trim off grams by giving the longer outdrive a slender "waist." The dual-pad slipper clutch is adjustable when out of the vehicle. It mates with the aluminum-tipped driveshaft.



SPECIFICATIONS

MANUFACTURER Academy

MODEL SB Pro

DISTRIBUTED BY MRC

SCALE 1/10

PRICE \$250

Varies with dealer

DIMENSIONS

Wheelbase 10.43 in. (265mm)

Width 9.8 in. (249mm)

WEIGHT

Total, as tested 53 oz. (1,489g)

CHASSIS

Type Plate

Material 2.4mm graphite

DRIVETRAIN

Type Shaft-driven full-time 4WD

Transmission ratio 2.75:1

Drive shafts CV-style, plated steel

Differentials Ball type with steel outdrives

Bearing type Metal-shielded and rubber-sealed ball bearings

SUSPENSION

Type Lower A-arm with steel-turmbuckle camber link

Shocks Teflon body, bladder-type with clip-on preload spacers

WHEELS

Type 2.2-in. one-piece dish

TIRES

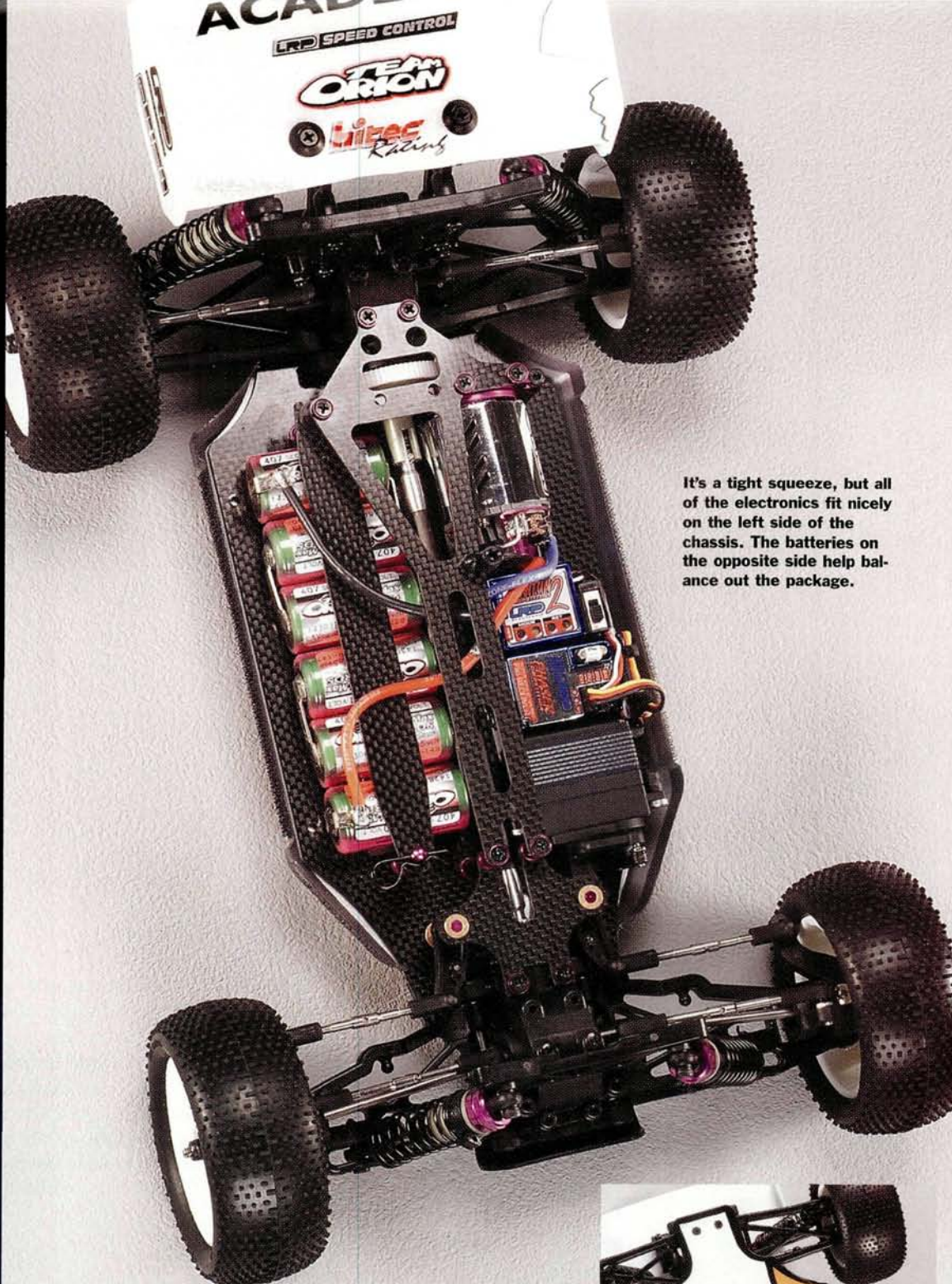
Type Academy Grand prix Fusion block-pin

ELECTRONICS

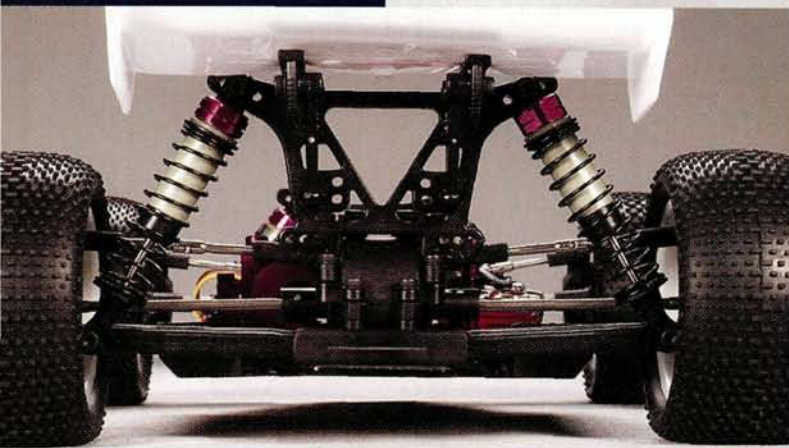
Not included

FACTORY OPTIONS

- Front stabilizer—item no. ST-T26
- Rear stabilizer—ST-T27
- Hard damper pistons—ST-T90 through T93
- Aluminum front arm mount Set—RG-T028
- Aluminum rear arm mount Set—RG-T029
- Aluminum rear arm mount (2-deg.)—RG-T030



It's a tight squeeze, but all of the electronics fit nicely on the left side of the chassis. The batteries on the opposite side help balance out the package.



Left: the aluminum Pro Damper shocks are factory assembled, and rear anti-squat is fully adjustable.

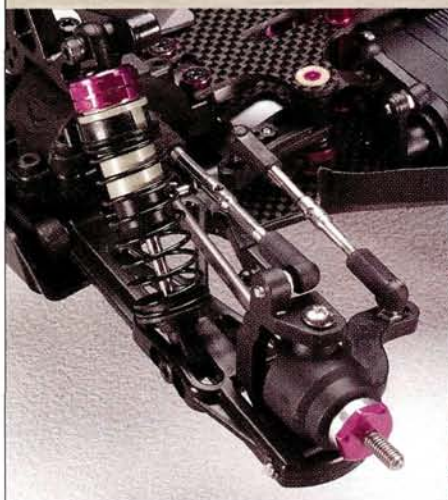
Right: a Lexan undertray covers the battery and motor slots and can be painted to match the body (Bill Zegers' paintwork is shown off here).





The rear wing is a one-piece, solid-plastic unit. The good news is you don't have to paint it and it can take more abuse during rollovers than a Lexan wing, but

The SB Pro accelerates extremely well.



Above: The Pro Dampers are silky smooth and factory built. Although not pictured here, Academy has upgraded the Pro with steering arms and rear uprights from the Velox nitro buggy that use larger bearings.

Right: Our review sample didn't have 'em, but all new Pros have vertical ball studs on the rear uprights to improve roll center tunability. Turnbuckles and CV axles are standard.

LIKES

- › Excellent shocks.
- › High-quality parts.
- › Incredible price.

DISLIKES

- › Manual doesn't offer setup advice (but modelrectifier.com should have setups by the time you read this).
- › Slipper clutch cannot be adjusted without a lot of wrenching.

THE COMPETITION

SB PRO

VEHICLE >> REVIEWED

J-Concepts BJ4
Team Losi Triple-X4 G+ >> 2/04
Yokomo MR4-BC Special >> 4/04

FIND IT

>>> Go to page 234 for manufacturers' contact information.

it does add a little more weight to the rear of the car. The wing is secured to plastic mounts with screws, and the mounts pivot, so you can adjust the wing's pitch to alter downforce. The buggy's Grand Prix Fusion tires are similar to Pro-Line's classic Hole Shots and molded in soft rubber, so they should be a good starting setup on most tracks. The included, solid, white wheels are very rigid to resist flexing under the punishing conditions the car is designed for.

YOU'LL NEED	WE USED
Radio	Airtronics M8
Speed control	LRP Quantum 2
Receiver	LRP Phaser
Servo	Hitec HS-5996
Battery	Team Orion 3300
Motor	Team Orion Chrome modified 10x2
Charger	LRP Pulsar 2



PERFORMANCE

I tested the SB Pro at Xtreme RC Raceway. The track was actually between layouts, so I had to put in a little shovel time before it was trigger time. The track was a relatively choppy, hard-packed clay/dirt mix with a light layer of dust on top. I set the car down and nailed the throttle. Immediately, I found that the slipper was set way too loose; it barked pretty hard under acceleration, thanks to the power generated by our Orion mod motor. A trip back to the pits to tighten 'er up solved the problem, albeit with a fair amount of wrenching since the top deck and driveshaft must be removed to gain access to the slipper adjustment screw that's buried in the drive cup.

One thing is for sure: this buggy accelerates extremely well. This is something that I've come to expect with a 4WD racing buggy. The car pulls nice and straight under acceleration and keeps in line under braking. There isn't any noticeable torque-steer or any other quirky on-power handling traits. The car also tracks very well at speed and didn't require any steering input to keep it going straight. The Orion battery and motor combo make a perfect pair in this car, and it launched hard and fast with each squeeze of the trigger. The 10-turn double provided more than enough spank to clear the technical doubles and triples I set up, yet I could roll on the power smoothly when exiting the turns. The soft-compound, pin-spike tires did a good job of supplying traction, and that helped the car squirt out of the turns

with precision. The car understeers just a tad when entering the turns under power, but just roll off the throttle a bit and the front end comes back into line.

As far as handling goes, the car was generally underdamped. The back end of the car was actually a little more underdamped than the front, so the car tended to donkey-kick over smaller jumps and bumps. After the first shakedown run, I brought the car back to the pits and swapped out the shock fluid for something slightly thicker. When I got it back on track, I found that it was much more manageable over the rough stuff. The nose flew a little higher over jumps, and it soaked up the choppy section much better. Whenever I got a little overzealous over the jumps, I was able to correct problems in midair with a quick stab at the throttle or brakes. The car reacts very quickly to inputs.

Another area in which the SB Pro shines is durability. I managed to cartwheel it a few times, even into the track barrier at full-tilt. The car never skipped a beat. It's as durable as any high-end four-wheeler we've tested in the past.

In all, it's a dialed 4WD, and there's nothing quite like driving a dialed 4WD on a track. It feels so secure and surefooted that we often wonder why the class isn't more popular here in the States.



THE VERDICT

Academy has put together a solid racing buggy with its new SB Pro. It comes with plenty of go-fast options that we racers look for first: graphite chassis, aluminum shocks, fully adjustable suspension, etc. You can see where corners were cut to make it more economical (namely, the bushing-equipped steering and diffs),

but that brings us to the price—and what a price it is! For \$250 (that's at least \$100 less than other pro biggies), it's hard not to consider this car a serious contender in its class. You get a bunch of world-class components without a world-class price. ■

RATINGS

Instructions	●●●●●●●●●●	7	The instructions are generally clear but lack setup info.
Parts fit & finish	●●●●●●●●●●	8	The motor mount had a fit issue, but the rest of the parts went together nicely.
Turn-in	●●●●●●●●●●	8	Has slight on-power push; plenty of off-power steering.
Corner speed	●●●●●●●●●●	8	Carries good corner speed and holds its line solidly.
On-power steering	●●●●●●●●●●	8	Front end tends to push a bit while on power—typical 4WD handling here.
Bump handling	●●●●●●●●●●	8	Stock springs are a little soft, so you may want to go with slightly thicker fluid.
Jumping	●●●●●●●●●●	8	Good midair manners, jumps nice and level.

Best buyer>>> Any electric off-road racer

OFNA brings electric starting to buggies

OFNA'S NEW, AFFORDABLE AND FEATURE-PACKED Ultra MBX Comp 4WD nitro buggy brings the fun and excitement of 1/8-scale off-road to everyone. The MBX Comp rolls out of the box fully assembled and topped off with a painted, trimmed and decaled body, and that means you can drive it as soon as you install batteries in the radio and feed the antenna through the antenna tube. Cranking over the Force .26 engine couldn't be easier thanks to OFNA's Electric Starting System that makes engine starting as easy as pushing a button. Add to that a host of cool features: 6061 machined-aluminum chassis, threaded-body aluminum shocks, 4mm machined shock towers, 145cc fuel tank, extra-wide suspension arms, aluminum tuned pipe, 3-shoe racing clutch, front universal axles and much more. Oh, and did I mention it costs less than \$400?



OFNA
ULTRA
MBX
COMP



KIT FEATURES

CHASSIS. A sturdy platform is necessary for off-road action, and the MBX Comp's 3mm-thick, hard-coated chassis is up to the task. It has a front kick-up for improved bump handling, and flat-head screws provide a smooth undercarriage. Slotted engine-mounting holes allow fine gear-mesh adjustment as well as the ability to change clutch bells.

Plastic front and aluminum rear chassis braces provide extra rigidity, and the blue-anodized aluminum steering and center-diff top plates match the shock towers and servo tray perfectly. The steering servo is mounted flush with the chassis to slightly lower the CG, and a cool transponder mount with three holes for body clips is bolted onto the side of the servo tray. The receiver and 4-cell battery holder are sealed inside a plastic radio box, and the antenna holder is molded to the lid for easy antenna routing. The radio box is a little cramped, but you can install a 5-cell hump battery pack if you wish.

DRIVETRAIN. The MBX features a conventional triple-diff, shaft-drive 4WD design. The 6-gear bevel diffs are filled with grease at the factory, but their sealed design allows you to tune them with silicone diff fluid. The steel, 51-tooth spur gear attached to the center diff should last a long time, and a 3-shoe racing clutch with soft off-road springs ensures smooth engine engagement.

Thick steel dogbones link the diffs, and a dual-disc brake system with vented-steel rotors and padded-steel calipers handles the stopping chores. A knurled brake-tension adjuster allows you to easily adjust the braking force. Plated-steel CV-type driveshafts with rubber boots drive the front wheels, while steel dogbones drive the rears.

SUSPENSION AND STEERING. The MBX Comp features long suspension arms that provide an extra-wide 320mm stance. That's wider than most buggies except the OFNA 9.5 Violator, which uses a similar suspension. The buggy is actually too wide for sanctioned racing but is perfectly suitable for most club racing. The extra width makes it more stable, which, in turn, makes it easier to drive.

An adjustable pivot-ball suspension is used up front, while lower suspension arms with upper camber links are found in the rear. The 4mm-thick, 6061 machined-aluminum shock towers are stout and resist bending. Several shock- and camber-link mounting holes are provided for track tuning, and the upper-

INCLUDED ELECTRONICS & ACCESSORIES

OFNA 27MHZ TRANSMITTER

The MBX Comp includes an AM radio system with steering and throttle trims and servo-reversing switches. It's a basic radio system that gets the job done.

OFNA SX-0001 SERVOS

These are standard plastic-gear servos with approximately 50

installed on a gear-reduction backplane to crank over the engine. A large 480-size motor is used for greater starting torque, and a power lead that connects to the glow plug eliminates the need for a glow starter. A compact handheld battery wand (powered by a 6-cell stick pack—not included) is provided. Insert the tip of the



oz.-in. of torque. They work well for backyard bashing and driving in wide-open areas, but servos with higher torque and quicker transit speed are required to exploit the buggy's true performance capabilities.

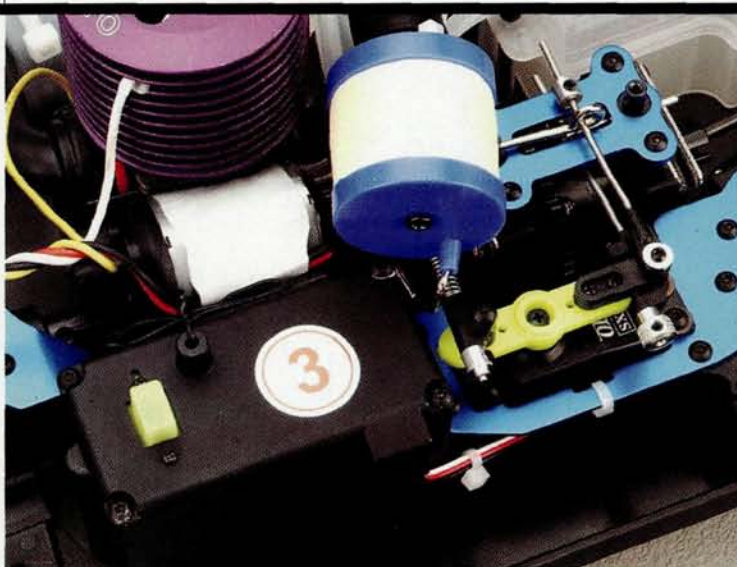
wand into the receptacle mounted on the rear shock tower; push the red button, and the engine fires up.

FUEL BOTTLE AND TOOLS

The MBX Comp also includes a fuel bottle, various hex wrenches and a package of extra screws.

OFNA ELECTRIC STARTING SYSTEM

OFNA's Electric-Starting System uses an onboard electric motor



Left: the radio box keeps the receiver and batteries free of dirt. I like the rubber switch cover and that the antenna mount is molded on top of the lid to simplify antenna routing. You can see the large 480-size starter motor between the engine and radio box.

Right: insert the tip of the wand into the receptacle mounted on the rear shock tower; push the red button, and the engine fires up. The OFNA Electric Starting System makes cranking over the engine a piece of cake; no more blisters from yanking on pull-start cords.



SPECIFICATIONS

MANUFACTURER OFNA
MODEL Ultra MBX Comp
SCALE 1/8
PRICE \$369
Varies with dealer

DIMENSIONS

Wheelbase 13 in. (330mm)
Width 12.6 in. (320mm)

WEIGHT

Total, as tested 129.86 oz.
(3,679g)

CHASSIS

Type 3mm-thick 6061
machined-aluminum

DRIVETRAIN

Type Full-time 4WD, shaft-driven
Primary 14T clutch bell/51T
spur gear
Transmission ratio 3.14:1
Final drive ratio 11.44:1
Driveshafts (F/R) Universal
joint/dogbones
Bearing type Rubber-sealed
bearings

SUSPENSION

Type (F/R) Pivot ball/lower
suspension arm with adjustable
upper link
Shocks Threaded-body aluminum
shocks

WHEELS

Type One-piece plastic dish

TIRES

Type OFNA X-Pin, 3 pairs (4 blue,
2 yellow)

ENGINE AND ACCESSORIES

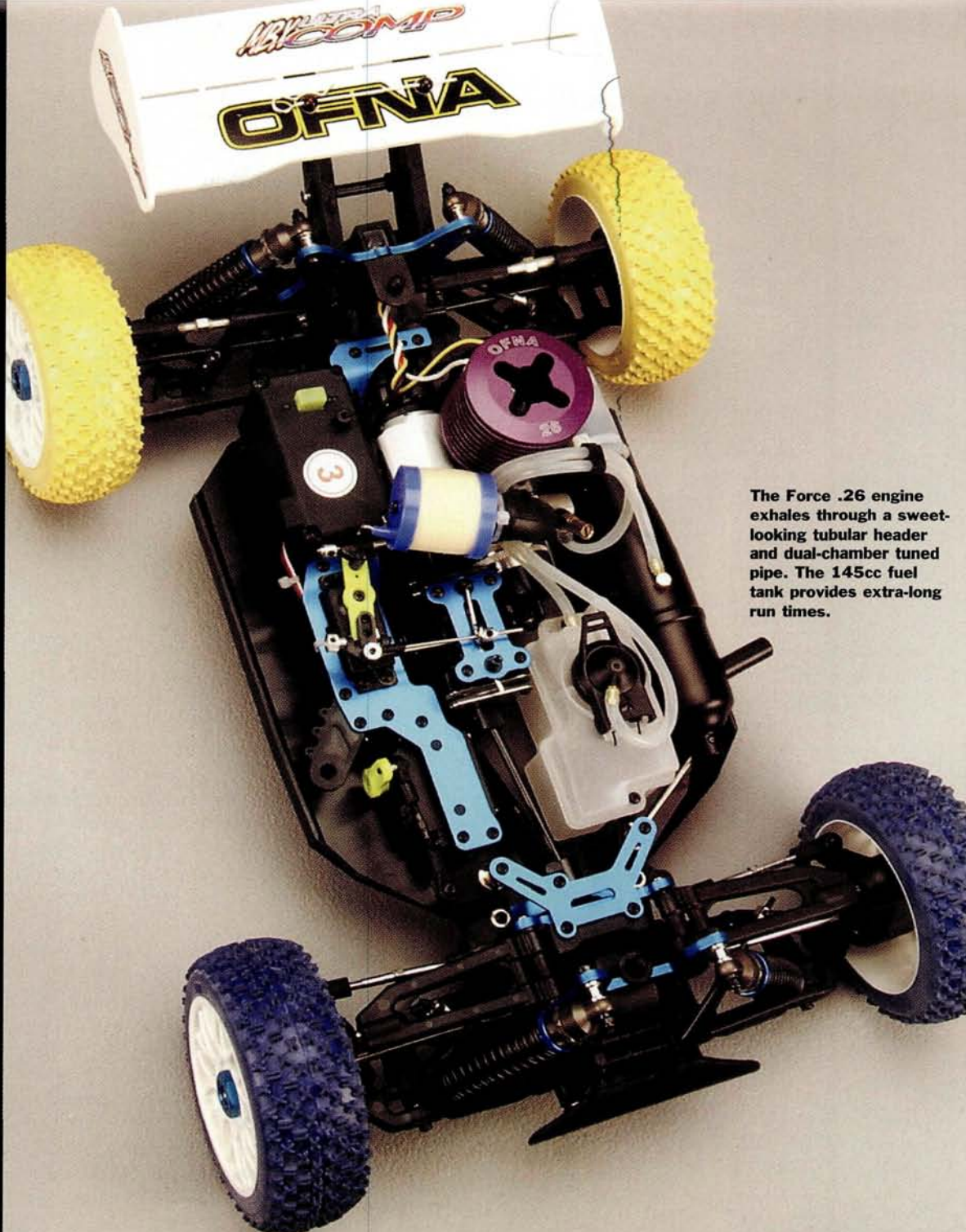
Engine OFNA/Force .26
Clutch 3-shoe
Manifold Tubular header
Pipe Dual-chamber aluminum
tuned pipe
Fuel tank 145cc
Starter OFNA Electric
Starting System

ELECTRONICS

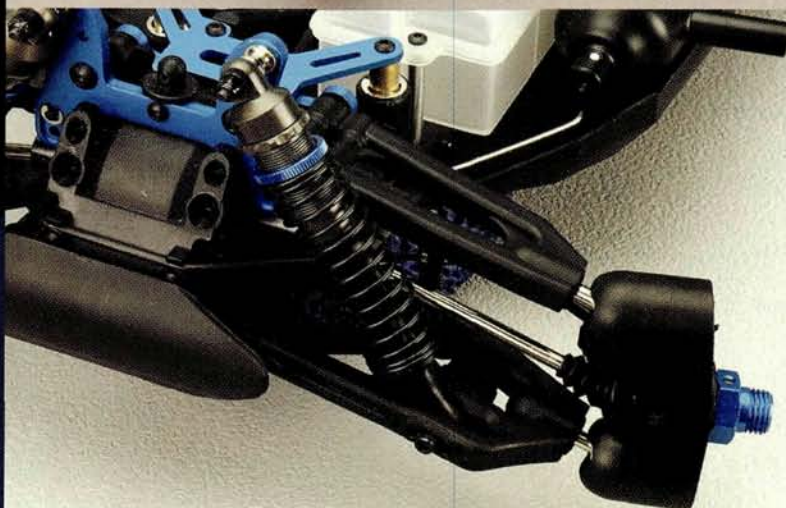
Transmitter/receiver OFNA
27MHz AM
Servos OFNA SX-0001

FACTORY OPTIONS

- PCR 7075 CNC components
- Shock towers (F/R)—item nos.
33990/33991
 - Servo tray—33998
 - Center-diff top plate—33997
 - Rear chassis brace and top
plate—33993
 - Upper steering plate—33996



The Force .26 engine exhales through a sweet-looking tubular header and dual-chamber tuned pipe. The 145cc fuel tank provides extra-long run times.



The MBX Comp features an adjustable pivot-ball front suspension. Extra-long suspension arms give the buggy a wide, outlaw stance. The threaded-body aluminum shocks and swaybars are nice touches. Check out the rubber boots that prevent dirt and grease from building up on the CV joints—sweet!



front suspension pins pass through the front shock tower for extra security. The threaded-body aluminum shocks feature aluminum preload adjusters, double O-ring seals, rubber shock booties and 3.5mm-thick shock shafts—good stuff.

A dual-bellcrank steering system with integrated servo-saver points the tires where you want them to go, while turnbuckles allow front toe and rear camber adjustment. Included front and rear adjustable swaybars keep the buggy flat in the corners.

ENGINE AND ACCESSORIES. The MBX Comp is powered by a Force .26 engine. This is the same powerplant as OFNA includes

with many of its other RTR products, including the Jammin X1 RTR and Blazer SST, and it has proven to be reliable. The engine features ABC construction for longer piston and sleeve life and a tall, 11-fin cooling head to keep engine temps in check. An efficient tubular header and an aluminum dual-chamber tuned pipe allow the engine to extract more horsepower, and a 3-shoe racing clutch ensures smooth and consistent launches off the line.

A 145cc fuel tank provides longer run times than the typical 125cc fuel tanks. The tank is not ROAR-legal, but who cares? Most first-time racers stick to racing on a club level, and most tracks won't balk at the larger tank. The fuel tank also has a cap-mounted pressure tap and a spillway with runoff. The MBX Comp is the only OFNA buggy that's equipped with OFNA's onboard electric engine-starting system that makes cranking the engine over fun and easy.

BODY, WHEELS AND TIRES. The six-color screen-painted body has cool-looking graphics, and it's already trimmed and decaled for you. The body required extra trimming, though (read "Tuning Tips"). Three pairs of OFNA X-Pin colored tires are included (four blue and two yellow). Bonded to cool-looking split-spoke white wheels, the colored tires add style, and they match the painted body perfectly. They also provide decent traction on a variety of terrain. A flexible-nylon dual-plane wing gives the MBX Comp its classic 4WD buggy styling.

TUNING

ADJUST THE RIDE HEIGHT

Our test buggy had too much "sag" when it rolled out of the box. Turn the shocks' preload adjusters to raise the buggy's ride height. You want the front and rear suspension arms to be level with the ground.

SMOOTHER BRAKES

Slide 3mm lengths of fuel tubing over the brake linkages in front of the linkage stops. The fuel tubing will damp the brake levers and provide slightly smoother and more linear brake control.

BODY TRIMMING

Enlarge the openings for the cooling head and fuel tank access. The cooling head opening is so tight that the power lead for the glow plug can be damaged or cut by the sharp edge of the Lexan. Enlarge the fuel tank access opening to make refueling easier.

LIKES

- › Feature-packed chassis.
- › Very affordable.
- › Electric Starting System makes cranking the engine over fun and easy.
- › Bigger fuel tank equals longer run times.
- › Extra-wide stance adds stability.

DISLIKES

- › Wimpy servos.
- › Body needs additional trimming to fit properly.

THE COMPETITION

VEHICLE >> REVIEWED

- Sportworks Mayhem RTR >> 3/05
RD Logics SHO >> NA
GS Racing Storm RTR Plus >> 1/05
XTM Racing X-Terminator >> 1/03
Kyosho Inferno Ready Set >> 8/03

OFNA MBX COMP

FIND IT

>>> Go to page 234 for manufacturers' contact information

YOU'LL NEED

- 7.2V battery
- Battery charger
- 12 AA batteries
- Fuel

WE USED

- Peak Power Flow 3300 stick pack
- Novak Millennium Pro
- Generic
- Trinity Monster Horsepower



PERFORMANCE



After engine break-in, I packed my gear and headed to my local track for some hot laps. My pit bag felt a lot lighter because I had left my starter box at home; my back already loved this buggy before it even hit the track. I filled the tank and then inserted the tip of the starting wand into the connector on the rear shock tower and pushed the button. The electric motor started to crank over the engine, and I saw the fuel enter the carb. A couple of seconds later, the engine fired up and went into a steady idle. When I had warmed it up for 30 seconds, I tossed the buggy on the track.

Away it went with a nice trail of smoke flanking it every time I pegged the throttle. The engine felt very responsive, and I was able to clear the washboard section with two well-timed jumps. Unfortunately, the steering felt very sluggish, and I had to slow down to get the buggy to turn in. The MBX Comp does, however, hold a fairly tight line while exiting the corners. You can install a high-torque servo and some good racing rubber to make the buggy far more competitive. I was impressed with the speed it carried down the huge, 150-foot-long straightaway; the MBX Comp is just as fast as my competition buggy in terms of top speed, and the small ruts and holes on the straightway didn't

faze it one bit.

Jumping the MBX Comp is a breeze; it cleared the widely spaced jumps with a slight bleep of the throttle, and it's very responsive to midair corrections. The damping feels spot-on because the landings were always smooth and under control. The disc-brake system performs satisfactorily, although the standard throttle servo doesn't have the wheel-locking torque that I'm accustomed to. I was still able to slow the buggy down, and that's what counts.

The 145cc tank provided extra run time; I averaged 13 to 15 minutes of hard running on a single tank of fuel. If you decide to race this buggy, keep quiet about the larger fuel tank because some racers might claim that you have an unfair advantage. Overall I was quite pleased with how the buggy performs, and with a few upgrades (high-torque servos and competition tires), the buggy can be competitive.

THE VERDICT

The MBX Comp is probably the most user-friendly 1/8-scale nitro buggy available. The Electric Starting System makes firing the engine up a piece of cake, the extra-large fuel tank provides increased run times, and the buggy's superwide 320mm stance makes it easy to drive. Add the list of hot standard features, and you have a solid package that's hard to beat. The best part, however, is that the MBX Comp is supported by a host of factory option parts that allow you to upgrade its performance as your driving skills improve. Make more powerful servos your first upgrade, and you can bump up the handling scores listed below.

RAJAR TESTING



Distance (in feet) traveled in:	0-132 ft. time	Speed at 132 ft.
1 SEC. > 13.6	3.88 SEC.	33.21 MPH
2 SEC. > 46.9		
3 SEC. > 89.8		
4 SEC. > 137.7	Time to top speed	Top speed
5 SEC. > 187.5	5.73 SEC.	34.86 MPH

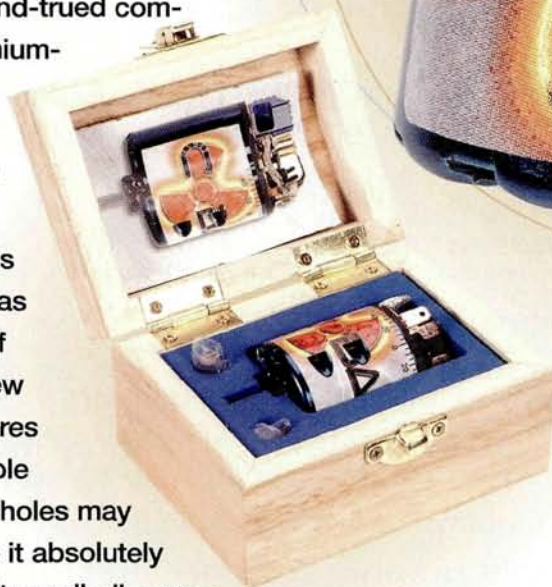
RATINGS

Instructions	●●●●●●●●●●●●●●●●	7	Good info, but the getting-started instructions are buried in the back of the manual (should be up front).
Included electronics	●●●●●●●●●●●●●●●●	7.5	Basic stuff here; a high-torque steering servo would be a welcome upgrade.
Parts fit & finish	●●●●●●●●●●●●●●●●	8.5	Good factory assembly, but the body required extra trimming.
Turn-in	●●●●●●●●●●●●●●●●	6.5	Considerable understeer caused by the overworked steering servo.
Corner speed	●●●●●●●●●●●●●●●●	7.5	The MBX Comp carries a fair amount of speed into the corners.
On-power steering	●●●●●●●●●●●●●●●●	7.5	Noticeable push under power (again, it's a servo issue).
Braking	●●●●●●●●●●●●●●●●	7.5	Good disc-brake system, but the standard servo doesn't have much holding power.
Bump handling	●●●●●●●●●●●●●●●●	9	The MBX Comp excels over the rough stuff.
Jumping	●●●●●●●●●●●●●●●●	9	Great midair attitude and excellent damping means that the MBX Comp loves to fly.

Best buyer>>> Any nitro-power off-road fan.

Trinity Cobalt

TRINITY'S NEW COBALT REPLACES THE LONG-RUNNING D-SERIES MOTORS that started in the late '90s and ended in 2004 with the D6. Like the D motors, the Cobalt features hand-wound construction, a diamond-trued commutator, epoxy-balancing and premium-quality brushes and springs that you won't find on any machine-wound motors. This close attention to detail increases the cost of the motors, but it's also what assures us that we'll get as much horsepower as possible. Don't make the mistake of assuming that this is a D6 with a new sticker and endbell. The Cobalt shares nothing with the D6 (with the possible exception of the can), and the vent holes may have been moved (this would make it absolutely unique, but only on a technicality). Its endbell, armature, brushes, brush hoods, springs, heat sinks, magnets and even shims are different, and these changes help the Cobalt to achieve its mission: putting Trinity-powered drivers on the podium.



FEATURES

- > All-new endbell to increase cooling airflow.
- > Oversize endbell heat sinks to keep brushes cool.
- > Tighter, longer brush hoods for better brush alignment.
- > Double-shunt XXX Le Mans compound brushes.
- > Factory-installed capacitors with LED indicator light.

■ **MOTOR CAN.** The Cobalt returns to the basics here. Instead of split magnets, the Cobalt has two of Trinity's Epic FB-9B magnets. These wet-pressed magnets have a very high flux density and other attributes that make them ideal for motors. The can has two small air-cooling vents on each side. The vents' size allows just enough cooling without any loss of magnetic-field strength. A number of directional vents on the bottom of the can allow air to flow even when the motor is mounted against a flat, non-vented surface.



The motor can is a standard vented can similar to that used on the D6, but the Cobalt has one-piece magnets.

AVAILABLE WINDS

ROUND WIRE

6T, 7T singles—item nos. TRI10075, TRI10076
7T double—TRI10077
8T single, double—TRI10078, TRI10079
9T single, double—TRI10080, TRI10081
10T single, double—TRI10082, TRI10083
11T single, double—TRI10084, TRI10085
12T single, double—TRI10086, TRI10087
13T single—TRI10088
14T single—TRI10089

FLAT WIRE

6T, 7T singles—TRI10060, TRI10061
7T double—TRI10062
8T single, double—TRI10063, TRI10064
9T single, double—TRI10065, TRI10066
10T single, double—TRI10067, TRI10068
11T single, double—TRI10069, TRI10070
12T single, double—TRI10071
12T—TRI10072
13T single—TRI10073
14T single—TRI10074

P94-CLASS BRUSHES

Dual-shunt silver—RC4379EP
Dual-shunt silver—RC4379EPNT*
Single-shunt, serrated face, hard copper—RC4380E
Serrated-face, hard copper—RC4380ENT*
Dual-shunt, hard copper—RC4380EP
Dual-shunt, hard copper—RC4380EPNT*
Serrated-face silver—RC4383E
Serrated-face silver—RC4383ENT*
Dual-shunt, serrated-face silver—RC4383EP
Dual-shunt, serrated-face silver—RC4383EPNT*
Dual-shunt, XXX Le Mans compound—TRI13504
Dual-shunt, XXX Le Mans compound, octagonal cut—TRI13507
Dual-shunt serrated copper, hard compound—EP1200
Dual-shunt, cross-cut, serrated copper, hard compound—EP1201

*No terminal eyelet (note "NT" at end of item no.)

AVAILABLE SPRINGS

Standard brush springs
Blue, light tension—RC4032
Green, medium tension—RC4028
Red, medium-heavy—RC4389
Purple, heavy tension—RC4033

OVERHEAD RIGHT-HAND BRUSH SPRINGS

Blue, light tension—RC4392
Green, medium tension—RC4393
Red, medium-heavy tension—RC4395
Purple, heavy tension—RC4396



This top view of the new endbell shows the overhead springs and the large aluminum heat sinks that keep everything about 50 degrees cooler than in previous motors.

■ **ENDBELL.** The endbell is completely new and was designed with the primary goal of keeping everything as cool as possible. The endbell's molded part is made specifically to accommodate the big aluminum heat sinks on one side and the onboard capacitors on the other.

The big heat sinks are secured to the endbell using large (2.5mm) capscrews that are installed from the bottom of the endbell's molded portion. Horizontal machined vents in the heat sinks are matched with contoured passages molded into the composite part of the endbell; this creates a direct path for air-cooling. Screw holes have been tapped into the heat sinks to allow the easy installation of an optional fan for additional cooling.

On the other side of the endbell is a small circuit board with three surface-mounted capacitors. This eliminates the need to install capacitors to avoid having radio interference; now, if only we could get them to install a big ol' Schottky diode There's also an LED indicator on the circuit board; it lights up (cobalt blue, of course) to let you know that the circuit board is connected and functioning, that the motor wires are hooked up and that the polarity is correct.

The Cobalt's brush hoods are tighter around the brushes, and they're longer on the inside, so they're closer to the commutator. Both features ensure that the brushes will be more closely aligned with the commutator and will not be able to move from side to side as much. The benefits of this are even more apparent when the brushes are worn and more likely to bounce around in the brush hood. It's a good thing, because the Cobalt has factory-installed XXX Le Mans compound brushes, which can be used for much longer than most brushes.



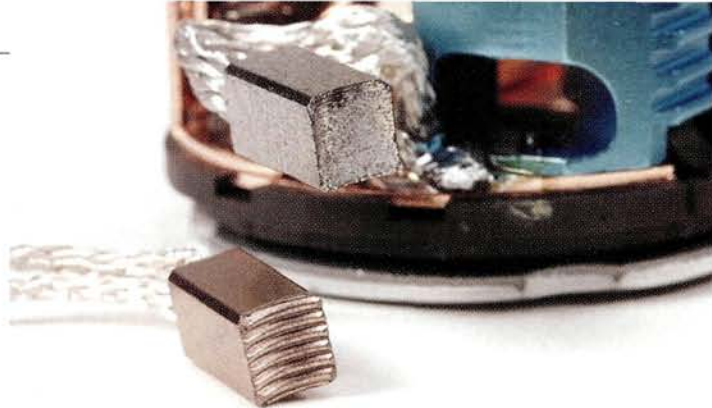
Two capscrews secure the aluminum heat sinks to the endbell. The brush hoods are tightened around the brush and extended towards the commutator to keep the brushes properly aligned at all times. Note the circuit board with the factory-installed capacitors (circled).

■ **ARMATURE.** The Cobalt motor uses one of two armatures, depending on its wind. A motor with 8 turns or fewer uses an armature with a 5.5mm web; a motor with 9 turns or more uses an armature with a 4mm web. Low-turn motors run hotter and less efficiently, and the thick-web armature helps to counteract that. Unlike the D6, the Cobalt's arms have straight laminations and full crowns for more solid punch and better overall horsepower. (The D6 has skewed laminations.)

The Cobalt is available with armatures wound with flat or round wire. The flat wire is reportedly wrapped more tightly, so the armature spools up more quickly for better low-speed response—great for touring cars and 4WD off-road. The round-wire motors produce less torque but they rev better for oval racing and other high-speed on-road events.



■ **BRUSHES.** The new XXX Le Mans compound brushes are a very big addition for the new Cobalt. They cost more than three times as much as a standard brush—approximately \$15 compared with \$5. It's surprising to see XXX brushes in a motor that must meet certain price restrictions to be eligible for competition under ROAR rules and those of other sanctioning organizations. The brushes are silver, which is much more expensive than blended copper. Their conductivity is slightly less than that of copper, but silver is softer, so it keeps the commutator in better shape for longer. Pro drivers who cut their comms after every run to maintain maximum performance are now lasting for five to 10 runs between comm cuts, and that's in a modified touring car that's really hard on the motor. Trinity has reported drivers in 1/12 modified logging 45 runs and more without having to cut the comm. The silver brushes don't oxidize either, so you can use them until they're too short for the brush springs to apply pressure. Brushes that contain copper oxidize with heat, and that degrades their performance. A set of 4383 brushes is also included with the Cobalt motor. They're a mix of silver and copper—much like the 4499 stock brushes. They're no match for the XXX compound when it comes to wear and performance, but they're in the box if you ever find yourself needing another set of brushes really fast.



The silver-based XXX-compound brush on top is installed in the motor at the factory. It's a long-lasting, high-performance brush that would cost about \$15. A second set of brushes (4383EPNT) is also included, just in case you run out of XXX brushes.

■ **BRUSH SPRINGS.** The motors we tested each had a pair of purple springs. These are the heaviest springs that will fit the unique endbell. Also included are a pair of red springs that are just one step down in tension, so you can experiment with lighter springs for vehicles such as 2WD buggies and 1/12-scales that don't require as much brush-spring tension.

OTHER STUFF

The Cobalt is packaged in hinged wooden box; it's a nice place to store this or any motor when it isn't being used. Even if you don't use it to store your motor, you can remove the foam inserts and use it to store extra brushes, springs, shims, etc. There's a spare set of brushes and brush springs. The Cobalt's comprehensive instructions explain which motors suit certain applications and offer advice on brush and spring combinations that you can use to set the motor up for a variety of vehicles. There are also instructions on how cutting the comm affects timing and how to compensate for that by modifying the brushes.



The two included sets of springs are purple (paired with the XXX brushes out of the box) and red for applications in which more rpm and less torque are needed.

DYNO TESTING

All the Cobalt motors were tested on the Robitronic Pro Master motor dyno. It's one of the few dynos that can test a motor under load using the same voltage as a 6-cell pack.

The Cobalt 10T flat-wire motor produces very good torque; it clocked in at between 185 and 190 Newton millimeters (Nmm) in our tests. The round-wire 10T Cobalt motor pulled nearly the same numbers elsewhere, but it ranged between 180 and 185Nmm of torque and pulled about 1,500rpm more on average. This confirms Trinity's recommendation that you should use the flat-wire version when you want more torque and the round-wire one when you need higher rpm. The differences are very subtle but important enough for Trinity to make flat- and round-wire versions of the motor. Both motors' peak power output averages 240 watts, and they were consistently in the 180 to 190Nmm range for torque.

We also tested an 8T flat-wire version of the Cobalt to see what a hot touring mod motor would look like on the dyno. The numbers are understandably higher; it consistently cranked out a peak power of more than 250 watts. What's curious is that our measurements indicate that the 8T motor has more torque than the 10T version; typically, the lower-turn motors have less torque.



TEST-SETUP SPECS

Wind: 10T and 8T single flat wire
 Brushes: double-shunt XXX Le Mans compound
 Springs: purple
 Comm. diameter: 0.299 in. (7.6mm)
 Timing: 12 deg.

The flat-wire 10T Cobalt has good bottom end; it spools the motor up with all of its nearly 190Nmm of torque; this drops to just under 100Nmm when the motor is making peak horsepower. Peak horsepower came in at more than 235 watts at 22,845rpm during our test.

TRACK TESTS

We strapped a Cobalt 8-turn into an XRAY T1FK right after the Carpet On-Road Nationals. Having seen the motor powering Ralph Burch Jr. to a 36-lap run (the only driver to do so), we had high expectations. The car comes out of the corner so hard that too much anti-squat actually makes its rear stand up a little when it's confronted with obscene horsepower. It only settled back down when the car reached the $\frac{3}{4}$ mark—when it should be lifting for the corner. Of course, we didn't attempt to match Burch's 8-second laps, but it was clear that we were in the ballpark with silly horsepower. Driving with these motors is more about managing the horsepower than it is about getting more. On our test track with our average driving skills, however, more

power would have been a problem. If you can manage the horsepower well, the motor is the last thing on your mind, and that's exactly how it's supposed to work. When the motor works well, power delivery is almost linear, so your focus should be on such things as hitting your braking points and apexes. In that respect, the Cobalt was invisible,

and that's a good thing. We didn't have to chase brush and spring setups; we didn't have to tear the motor down to cut the comm after every other run, and there was no shortage of horsepower. The motor does its job so that you don't have to worry about it during a race.

THE VERDICT

The Cobalt is a big step forward for Trinity. Other motors were closing in on the D6, and some even argue that certain motors surpassed it. The knowledge that cool brushes work better than hot ones ushered in an era of supercooled motor brushes for durability and lasting performance. The new Cobalt has risen to the challenge, and it does so without changing the entire paradigm of brush and motor configuration. It is not a dyno champion, although its numbers are as strong as those of other motors we've tested; it's a motor for racing on the track. The new endbell does a great job of cooling the brushes, the commutator and the armature, and this really pays off at the end of a run. The XXX silver-based-compound brushes are also a big plus. They add to the benefits of the new endbell because they are made of a compound that's much easier on the comm, and they can be used until they are completely worn. Add to this that the motor includes the most comprehensive instructions to date and an extra set of brushes and springs, and you have the best Trinity modified motor ever built. ■

DYNO-TEST DATA

10-TURN

Peak rpm: 44,210
Peak power (watts): 235.3
Peak torque (Nmm): 190.4
Peak efficiency: 80.5%

8-TURN

Peak rpm: 48,486
Peak power (watts): 256.7
Peak torque (Nmm): 205.7
Peak efficiency: 81.6%

FIND IT

» Go to page 234 for manufacturers' contact information



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► 4-in-1 Electronics



► 2 Micro Servos



► 4 ch FM Transmitter



DIGITAL SERVO GUIDE

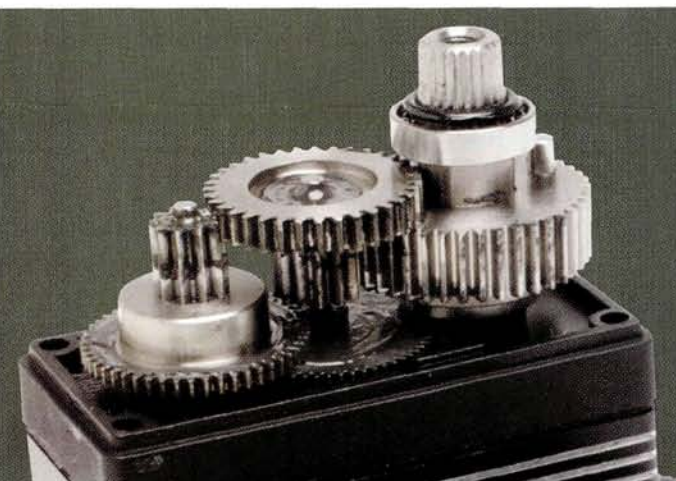
MODEL MUSCLE

BY JOHN HOWELL

IF YOU DON'T HAVE A DIGITAL SERVO in your car or truck, you need to stop right now and read this article. Digital servos perform significantly better than their analog counterparts. They offer higher resolution that reduces deadband for ultimate control, and they offer a faster control response and increased acceleration. They also produce constant torque throughout their range of travel and have noticeably increased holding power when in a stationary position (this helps to keep even the biggest monster truck tires in line while you're steering through a high-speed turn). So if you want to know about the hottest digital servos on the market, they're all here! We also include a few tips for you to bear in mind when you decide to make that jump up to the digital world.

Plastic gears or metal gears?

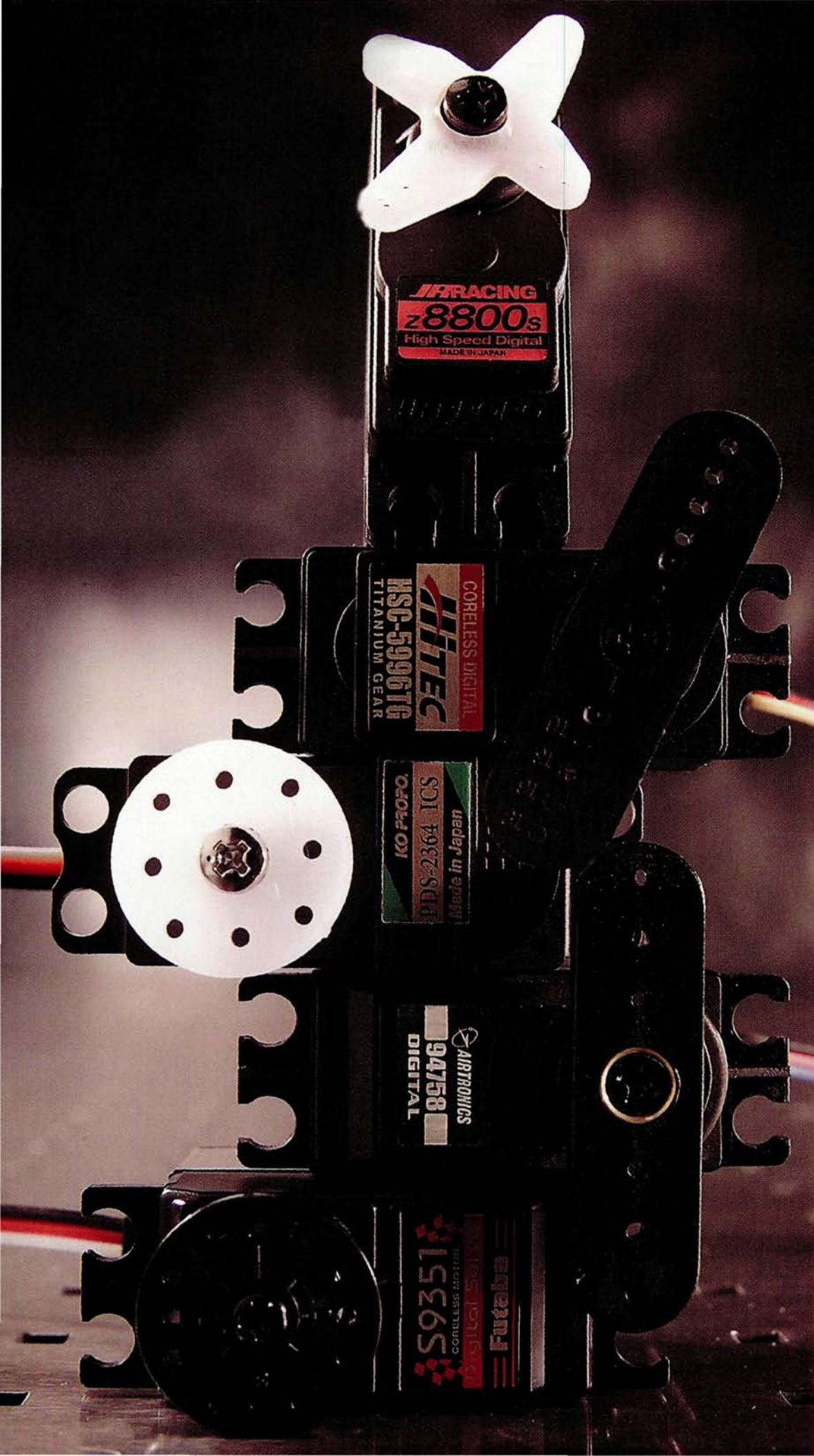
When you shop for a servo, its gear is one of the first things you should consider. Servo gears are typically made of molded plastic or machined metal (brass or aluminum alloy). As you'd expect, plastic gears are much cheaper to produce than metal gears, but they aren't as strong. Certain manufacturers offer a servo in both plastic and metal versions, and the plastic one almost always has a lower torque rating. But there's one area in which a plastic gear excels—low radio frequency (RF) noise. When metal parts move against one another, they generate RF noise, and an electrically "noisy" servo can cause glitching. This is why many top drivers use plastic-gear throttle servos in their vehicles.



Analog or digital?

Digital servos first appeared over a decade ago, and every major servo manufacturer now sells them. They offer two advantages over analog units: speed and holding power. The main difference between the two types is that the microprocessor that controls a digital servo's position is up to six times faster than an analog one. When the digital servo's "brain" gets a signal from the feedback potentiometer telling it to update the position of the output shaft, it responds so quickly that any deadband is effectively eliminated.

"Deadband" is the degree to which the servo's shaft must be deflected from its current position before the servo responds to correct it. And because the servo position is updated so frequently (300 times a second is typical; 50 or 60 times a second in an analog servo), a digital servo can hold its position more forcefully, which is the holding power. One result of this is the "buzzing" sound it makes, even sometimes when idle. The disadvantage of the constant position updating is that a digital servo uses more battery power, so when you use one in a nitro car, a high-capacity NiMH pack is a must-have.



PHOTOS BY PETE HALL

AIRTRONICS
94758
DIGITAL

AIRTRONICS

Airtronics offers fewer digital servos (just three) than other manufacturers included in this guide, but its servos pack some pretty respectable specs. They have coreless motors and cases of standard size, and the 94758Z's 0.06-second transit time makes it one of the fastest two on the market (it's a tie with Futaba's S9254). The 94755Z uses a combination of plastic and metal gears; the other two feature a metal gear train.



FUTABA

Futaba, like Hitec, offers 11 digital servos, and its servo line is the most diverse. It offers everything from metal- and plastic-gear servos in mini to standard to large-scale sizes, plus a slim standard servo and a low-profile unit. Its S9254 matches the Airtronics 94758Z's fastest 0.06-second transit time.

In general, you should buy the fastest servo with the highest speed and most torque you can afford.

Multi-pole motors or coreless?

Two types of motor are used to drive servos: multi-pole and coreless. Multi-pole motors are similar to traditional electric motors; they have three or five armature poles that act as miniature electromagnets. Five-pole motors are more accurate than three-pole ones, but both types have a property that coreless motors don't have: when the armature is in a position that brings two poles within the field of one of the motor's permanent magnets, it has less torque because the two poles "share" the magnetic field. This isn't as much of a problem with an armature that spins constantly (such as your 24-degree stocker), but a servo motor might have to hold a position for a few seconds under load.

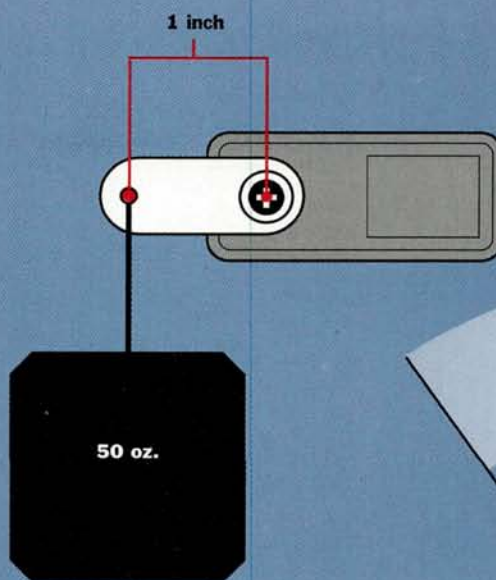
Coreless motors don't have an armature in the same sense; instead, a light-weight woven basket of wire with a permanent magnet in the middle acts as the armature. This armature basket moves much faster than an iron-core armature, especially when changing direction. Such motors are also much more efficient than poled motors, but they generate more heat, and they're more sensitive to shock.

Instead of a conventional armature, a coreless motor uses a wire "basket" that is much lighter.

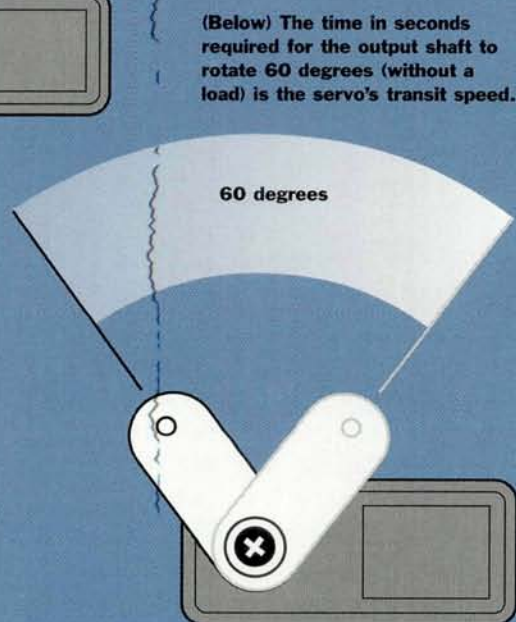


What the ratings mean: torque vs. speed

Servos are usually rated by how long they take, in fractions of a second, to complete a 60-degree sweep without a load and by their torque, which is expressed as oz.-in. Additionally, most manufacturers provide speed and torque ratings at 4.8 volts (for a 4-cell receiver pack) and 6 volts (for a 5-cell pack). Even if a 6V rating isn't provided, it is usually safe to use a servo at that voltage—unless its manufacturer says otherwise. In general, you should buy the fastest servo with the highest speed and most torque you can afford. Manufacturers frequently sell a servo under two item numbers; the only difference between the two servos is that one is geared for speed and the other is geared for torque. If you have to choose, go for more torque, since all the speed in the world won't help you if your servo doesn't have enough torque to turn your vehicle's wheels.



One ounce-inch represents the amount of force exerted by a one-ounce weight acting on a one-inch lever. In the example shown here, the lever is a one-inch long servo arm, and it is lifting 50 ounces. So, this servo has 50 ounce-inches of torque.

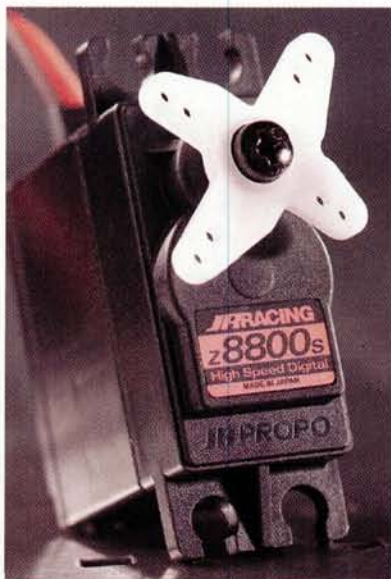


(Below) The time in seconds required for the output shaft to rotate 60 degrees (without a load) is the servo's transit speed.

If you have to choose, go for more torque

HITEC

Hitec products have long been known to offer a lot of bang for the buck. Among its line of 11, standard-case-size servos is one digital microservo. All have metal gear, and HS-5996, HS-5997 and HS-5998 have titanium gear trains (Hitec is the only company to offer this feature). With 333 oz.-in. of torque, the HS-5955 is one of the most powerful servos available.

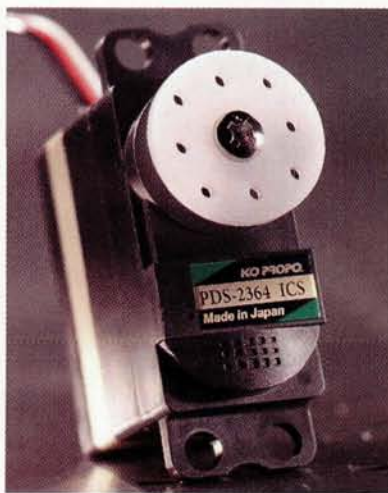


JR RACING

With the exception of the DS8550, JR's digital servos are almost completely new for this year. They all feature metal gear trains and are powered by efficient coreless motors. All come in a case of standard size, and with 282 oz.-in. of torque, the DS9000T ("T" for torque) is the real powerhouse.

KO PROPO

KO offers a unique line: the servos designated "ICS" on the chart are standard digital servos, and those with "FET" in their item number feature power-boosting FET technology. KO also offers several relatively inexpensive plastic-gear-train servos with its high-end metal-gear units. You'll also find servos of standard size, a smaller ($\frac{1}{12}$ -scale) servo and a large-scale servo. All KO servos have coreless motors.



DIGITAL SERVO GUIDE

MODEL MUSCLE

ITEM NO.	TORQUE (OZ.-IN. @ VOLTS)	TRANSIT TIME (SEC.)	GEAR TYPE	MOTOR TYPE	WEIGHT (GRAMS)	CASE SIZE	PRICE*
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AIRTRONICS

94755Z	81 @ 6	0.11	P/M	Coreless	58	Standard	\$105
94757Z	115 @ 6	0.07	Metal	Coreless	60	Standard	\$110
94758Z	115 @ 6	0.06	Metal	Coreless	60	Standard	\$110

FUTABA

S3150	51.4 @ 4.8	0.25	Nylon	Coreless	22	Slim standard	\$60
S9650	62.5 @ 6	0.11	Nylon	Coreless	26	Mini	\$60
S3151	43.1 @ 4.8	0.21	Nylon	Coreless	42	Standard	\$35
S3152	87 @ 6	0.18	Nylon	Coreless	63	Standard	\$50
S9254	47.2 @ 4.8	0.06	Nylon	Coreless	49	Standard	\$110
S9255	112 @ 4.8	0.17	Metal	Coreless	63	Standard	\$115
S9350	139 @ 6	0.12	Metal	Coreless	63	Standard	\$100
S9351	192 @ 6	0.13	Metal	Coreless	63	Standard	\$110
S9451	121 @ 6	0.10	Metal	Coreless	56	Standard	\$80
S9550	83 @ 6	0.11	Metal	Coreless	45	Low-profile	\$80
S5050	264 @ 6	0.20	Metal	5-pole	124	Large	\$90

HITEC

HS-5245	76 @ 6	0.12	Metal	3-pole	32	Micro	\$48
HS-5625	131 @ 6	0.14	Metal	3-pole	60	Standard	\$55
HS-5645	168 @ 6	0.18	Metal	3-pole	60	Standard	\$55
HS-5925	128 @ 6	0.08	Metal	Coreless	56	Standard	\$90
HS-5945	181 @ 6	0.13	Metal	Coreless	56	Standard	\$90
HS-5955	333 @ 6	0.15	Metal	Coreless	62	Standard	\$115
HS-5996	111 @ 6	0.10	Metal	Coreless	62	Standard	\$115
HS-5997	181 @ 6	0.14	Metal	Coreless	62	Standard	\$115
HS-5998	250 @ 6	0.19	Metal	Coreless	62	Standard	\$115
HS-6635	83 @ 6	0.15	Metal	3-pole	52	Standard	\$48
HS-6965	111 @ 6	0.08	Metal	Coreless	52	Standard	\$85

JR RACING

DS8550	188 @ 6	0.15	Metal	Coreless	54	Standard	\$115
DS8800S	98 @ 6	0.10	Metal	Coreless	57	Standard	\$110
DS8800T	188 @ 6	0.18	Metal	Coreless	57	Standard	\$110
DS9000T	282 @ 6	0.15	Metal	Coreless	62	Standard	\$115
DS9000S	128 @ 6	0.15	Metal	Coreless	62	Standard	\$115

KO PROPO

PDS-2363 ICS	111 @ 6	0.08	Metal	Coreless	56	Standard	\$133
PDS-2364 ICS	180.5 @ 6	0.13	Metal	Coreless	56	Standard	\$133
PDS-763 ICS	90.3 @ 6	0.14	Plastic	Coreless	45	Standard	\$54
PDS-764 ICS	104.2 @ 6	0.16	Plastic	Coreless	45	Standard	\$54
PDS-8044 ICS	333 @ 6	0.20	Metal	Coreless	142	Large	\$130
PDS-949 ICS	38.8 @ 6	0.09	Metal	Coreless	27	Standard	\$100
PDS-2343 FET	111 @ 6	0.08	Metal	Coreless	55	Standard	\$115
PDS-2344 FET	180.5 @ 6	0.13	Metal	Coreless	55	Standard	\$115
PDS-2123 FET	131.9 @ 6	0.06	Metal	Coreless	55	Standard	\$115

*Prices vary with dealer.

FIND IT

>>> Go to page 234 for manufacturers' contact information

Solve the 10 most common nitro problems

GETTING YOUR NITRO ENGINE STARTED AND KEEPING IT RUNNING HAVE NEVER BEEN EASIER because manufacturing advances have made our engines more reliable than ever. What can't be machined away, however, are user errors caused by inexperience. This article will help you to quickly recognize and resolve some of the most common nitro mistakes and oversights.



> **PROBLEM 1 ENGINE DIES AS SOON AS THE STARTER BOX IS DISENGAGED.**

> SOLUTION This is usually caused by a loose clutch nut or pilot shaft. They index the flywheel to the crankshaft. Cranking down on the clutch nut or pilot shaft presses the flywheel against the tapered collet and locks the flywheel against the crank. When the clutch nut/pilot shaft loosens, however, the flywheel is often able to spin independently of the crankshaft. That isn't always obvious because the engine usually cranks when the vehicle is pressed down onto the starter box. The pressure on the vehicle will often give the flywheel just enough bite to crank the engine, but the engine will stall almost as soon as the starter box is disengaged. Check the flywheel to see whether it spins on its own; if it does, remove the engine and crank down the clutch nut/pilot shaft.

> **PROBLEM 2 PISTON STICKS AT THE TOP OF THE CYLINDER.**

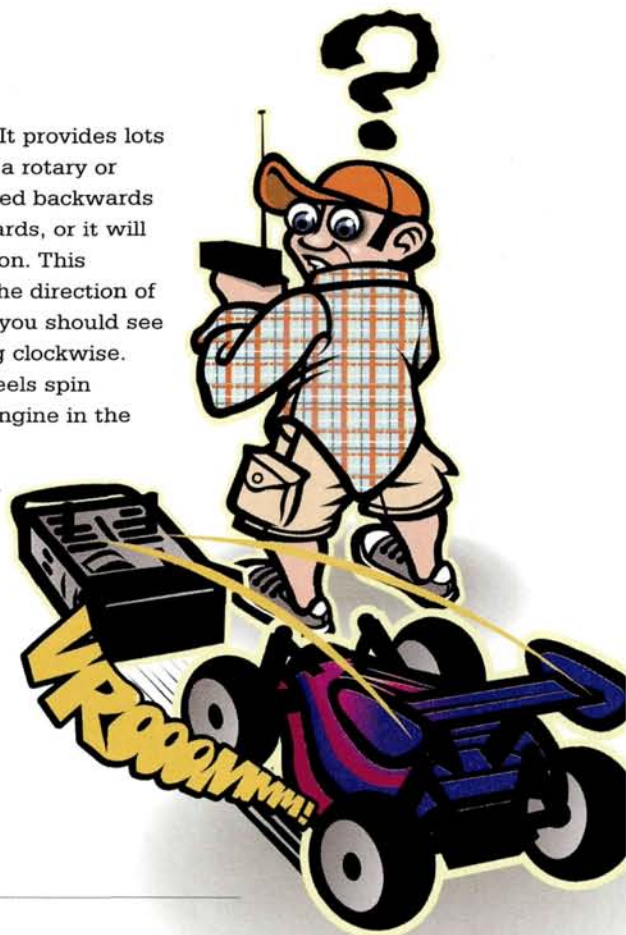
> SOLUTION Anyone who's new to nitro engines might be puzzled that the piston can get stuck at the top of the cylinder. This happens most often when an engine is brand-new and also when it's started in cold weather. The taper in the sleeve means that the piston could get stuck in the top of the cylinder when you start the engine. The solution? Heat the engine before you start it, and your piston will be less likely to stick. This is especially important when you start a new engine for the first time (under any condition).

> PROBLEM 3 ENGINE STARTS BACKWARDS.

> SOLUTION A starter box is great for starting a competition nitro engine. It provides lots of cranking power and can crank an engine over at much higher speeds than a rotary or pull-starter can. There's just one catch: we consistently see starter boxes wired backwards that then crank the engine in reverse. This causes the engine to start backwards, or it will fire up just at the right moment and then jump backwards in the right direction. This error is more common than you might think, but it's easy to avoid. To check the direction of engine rotation, look directly at the tip of the crank from the carburetor side; you should see the engine turning counterclockwise, and the starter wheel should be turning clockwise. Keep an eye on the tires and the carburetor; if the carb spews fuel or the wheels spin backwards when you try to start the engine, reverse the wires to crank the engine in the proper direction.

> PROBLEM 4 ENGINE STALLS AS SOON AS YOU PUT YOUR VEHICLE ON THE GROUND.

> SOLUTION A seized clutch-bell bearing or a broken clutch-retainer spring will usually cause the engine to stall as soon as your vehicle hits the ground. The clutch isn't usually engaged when the engine runs at low rpm, but a failed bearing or clutch-return spring is the equivalent of having the clutch engaged all the time. Put a vehicle on the ground with its engine at idle and its clutch locked, and you'll almost always snuff out the engine. Inspect the bearings and return springs, and find the cause of your problem.

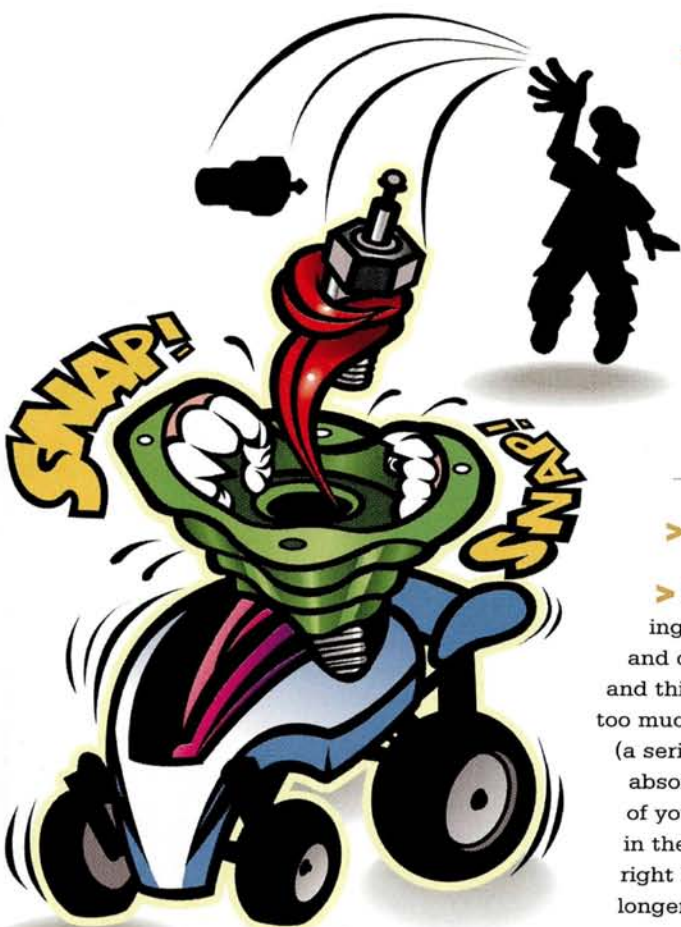


> PROBLEM 5 ENGINE DIES WHEN IT WARMS UP.

> SOLUTION An engine that dies or runs poorly when it has reached running temperature may have an excessively worn piston and sleeve. When the engine is cold, the piston/sleeve fit is relatively tight, and it isn't difficult to start. But when the engine warms up, the heat expands the piston sleeve. This causes a lot of the pressure above the piston to be forced out of the cylinder into the crankcase, and your engine has one foot in the grave. If you think this might be the case with your engine, check the piston/sleeve fit. Rotate the engine's flywheel using just one finger. If you can work it through an entire revolution without feeling much resistance, it's time to order a new piston and sleeve.

> PROBLEM 6 ENGINE EATS GLOW PLUGS.

> SOLUTION An engine with an appetite for glow plugs is usually suffering from being run with a lean fuel mixture. When there's a shortage of fuel and oil in the combustion chamber, the cylinder temperatures get very high, and this is likely to shorten a glow plug's life. But there's more: running with too much nitro, having a plug that's too "hot" for its application, fuel detonation (a serious combustion defect) and even running with old fuel that has absorbed moisture can all take out a glow plug pretty efficiently. Stay on top of your fuel-mixture setting, and you'll save your plugs. Otherwise, use a plug in the engine manufacturer's recommended temperature range, and use the right blend of fuel for your engine. Do this, and your glow plugs will last longer than ever.



> PROBLEM 7 SLIPPING ONE-WAY BEARING IN STARTER.

> SOLUTION A one-way bearing that slips on the starter shaft is the number-one cause of starting problems with engines that have rotary or pull-starters. The one-way bearing (also referred to as a "roller clutch") becomes clogged with oil residue that gums up the bearing action, and this will eventually cause the bearing to slip on the shaft. When this gets really bad, the starter will engage only intermittently, if at all. It's easy to remove the starter housing and clean the one-way bearing, but this fix is often temporary, and the starter soon slips again. The root of the problem is usually a worn starter shaft. When you start the engine, the starter shaft spins inside the stationary one-way bearing at speeds of as much as 40,000rpm. This understandably wears the starter shaft. A one-way bearing works best with a shaft of a specific size and within limited tolerances. When the shaft diameter wears, the one-way bearing will slip, and the only solution is to replace the one-way bearing and the starter shaft.

> PROBLEM 8 IDLE SPEED GRADUALLY INCREASES WHEN THE ENGINE IS LEFT TO IDLE.

> SOLUTION An idle speed that gradually increases is typically caused by a fuel-mixture problem, and it's a sign that the low-speed needle has been set too lean. When it's running at speed with a properly set main needle, the engine will seem to be properly tuned, but if the idle speed steadily increases, that means the low-speed mixture is too lean. To check the low-speed mixture setting, pinch the fuel line and see how long the engine continues to run before it seems to be on the verge of stalling. A good low-speed mixture setting allows an engine to run for about 5 seconds. If it's ready to stall before that, the mixture is too lean; longer than 5 seconds, and it's probably too rich.

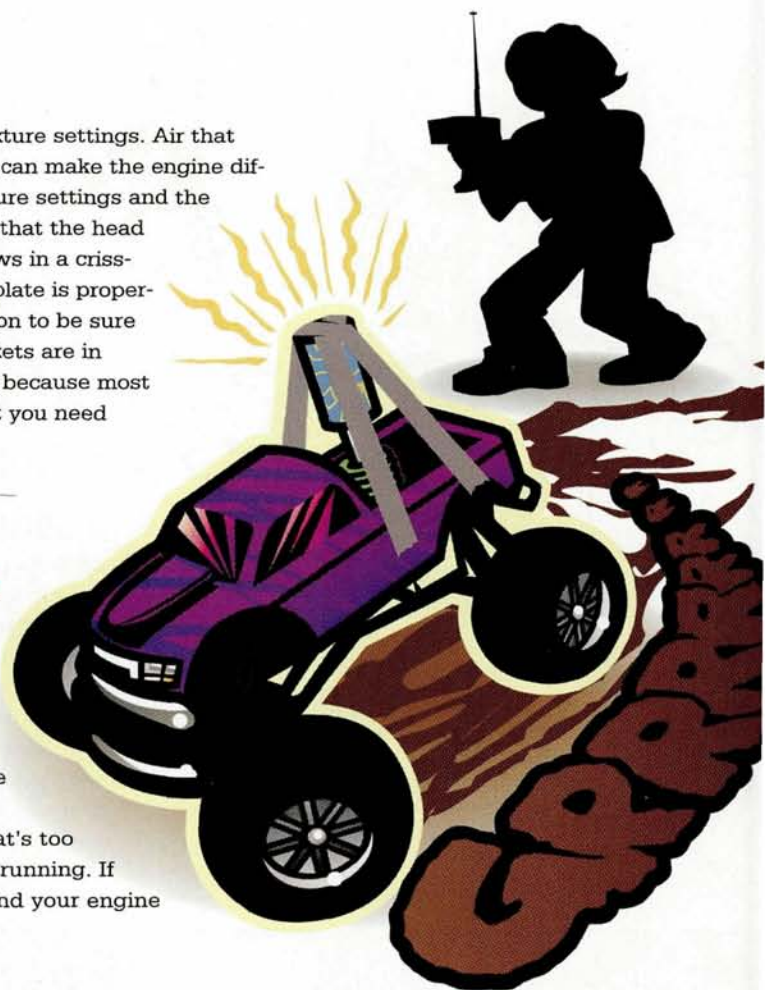
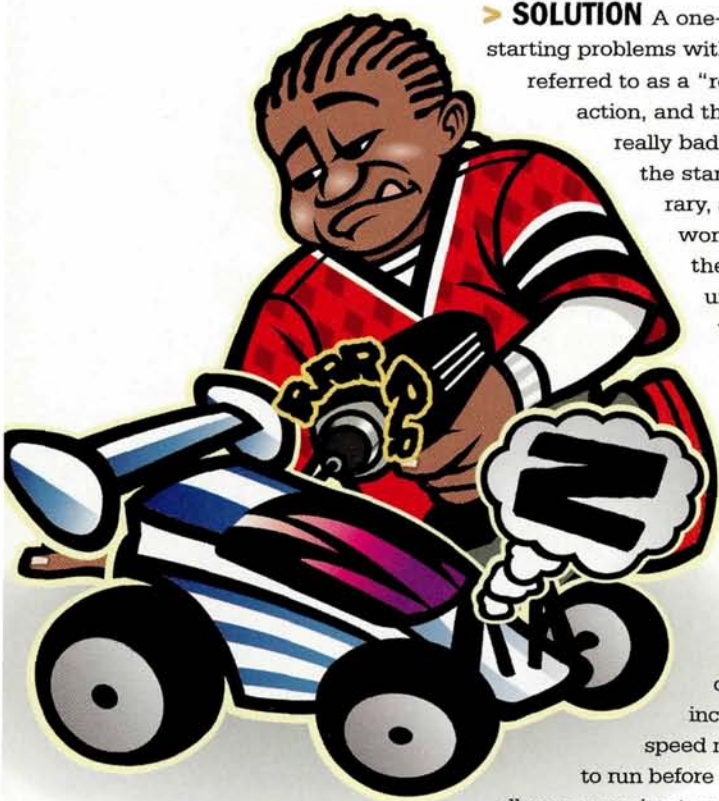
> PROBLEM 9 IDLE SPEED AND FUEL-MIXTURE SETTINGS ARE VERY UNSTABLE.

> SOLUTION Air leaks are usually the cause of erratic idle and mixture settings. Air that leaks into the engine unpredictably alters the air/fuel ratio, and that can make the engine difficult to tune and to keep running. If you're always chasing the mixture settings and the engine doesn't idle at a consistent speed, look for an air leak. Check that the head has been installed properly; do this by gradually tightening the screws in a criss-cross pattern until they're absolutely tight. Make sure that the backplate is properly sealed with a new O-ring or gasket. Last, check the carb installation to be sure that it's fully seated in the engine block and that any O-rings or gaskets are in good shape. I'm reluctant to suggest the use of silicone sealant here because most people use way too much of it, but if you must use it, remember that you need only a little to ensure a good seal between the carb and the block.

> PROBLEM 10 AS SOON AS THE GLOW STARTER IS REMOVED FROM THE GLOW PLUG, THE ENGINE STALLS.

> SOLUTION This problem has two common causes. Usually, the engine is being run with a fouled glow plug. Metal particles, oil and other contaminants can get stuck to the glow plug's coil. This gradually affects the plug's ability to keep the engine running. If you're sure that your fuel-mixture setting is in the ballpark, replace the plug so that you'll be able to eliminate it as a possible cause.

The second possible cause is that you're using a fuel mixture that's too rich, and it requires extra juice from the starter to keep the engine running. If you've already replaced the glow plug, use a leaner fuel mixture, and your engine should be able to run without the starter. ■



RADIO CONTROL **car action** **READERS'** **CHOICE**



ELECTRIC BUGGY

1. ASSOCIATED FACTORY TEAM B4

Associated is always a major force in the Readers' Choice Awards, and this year is no different. The B4 is back with a second consecutive win, making it three in a row since the B3 wrested the title away from Team Losi in 2003. Now that Jared Tebo has signed with the A-Team, you can expect this latest trophy to just be the first in a long line of additions to the company trophy case.

2. TEAM LOSI TRIPLE-X BRIAN KINWALD EDITION 2

3. KYOSHO HALF-8 MINI INFERNO

ELECTRIC TRUCK

1. ASSOCIATED FACTORY TEAM T4

Two in a row for the B4 and two in a row for the T4! Looks like the Associated guys will be lugging a lot of hardware home from the RCX show (where we will have already announced the winners by the time you read this). As the best Associated truck ever and freshly tricked out with the Factory Team treatment, it's easy to see why the T4 is your favorite electric truck—again.

2. TEAM LOSI TRIPLE-XT MATT FRANCIS 2

3. TRAXXAS E-MAXX



ELECTRIC TOURING CAR

1. ASSOCIATED TC4

The TC4 is already a winner in your eyes. It's your favorite for '05, and it marks Associated's sixth consecutive win in the electric touring category. Since the TC3 debuted in 2000, the hugely successful shaft sedans have been your picks every year.

2. XRAY T1 FACTORY KIT

3. TAMIYA 415

» By the RC Car Action Team

FORGET FLORIDA, FORGET IDAHO, FORGET THE ELECTORAL COLLEGE. When it comes to the Readers' Choice Awards, it's a straight-up vote count to see who wins the honor of being named one of your favorites for 2005. Remember, you picked 'em, so if your favorites aren't here, you didn't vote hard enough!



NITRO BUGGY

1. KYOSHO INFERNO MP-777

After we split the vehicle categories into "Nitro" and "Electric" in 2001, one manufacturer has dominated the Nitro Buggy category—Kyosho. The Inferno MP-7.5 carried the torch until last year, and now it's the 777's turn to shine. Can the K-car hold on for another year with all the new heat in the gas buggy class? We won't be surprised if the Inferno is still burning strong in '06.

2. XRAY XB8

3. OFNA JAMMIN' X1 CR

NITRO TRUCK

1. TRAXXAS REVO

"We don't see anything beating the T-Maxx for a long time. Oh wait, the Revo ..." That's what we said last year, and dang if it didn't come true. You made 2004 Truck of the Year your choice for 2005's top truck despite strong competition from all the big players. Is this the beginning of a new Traxxas monster-truck dynasty?

2. TEAM LOSI LST

3. HPI SAVAGE



NITRO TOURING CAR

1. ASSOCIATED NITRO TC3

Another one for Associated. What can we say this year? We used up all our best stuff when the Nitro TC3 won in 2002, 2003 and 2004. Enough already! We're going to have start retiring cars like they do with videos on "TRL"!

2. HPI R40

3. SERPENT 710



TRANSMITTER

1. AIRTRONICS M8

When it comes to pro-level radios, your votes tell us there's the Airtronics M8, and then there's everything else. Year in and year out, you pick the M8 as your favorite. And so do most pros! As long as we've had the Readers Choice Awards, Airtronics' best radio has been the number-one choice. Will next year be the first win for the M11?

2. FUTABA 3PH

3. JR RACING XS3 PRO



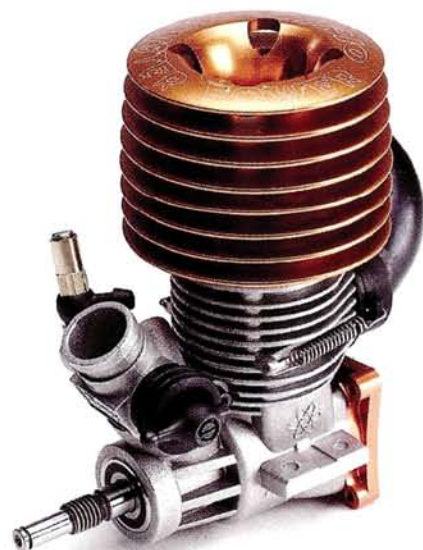
FUEL

1. TRINITY MONSTER HORSEPOWER

Hmmm ... what do you hope your fuel will do? Help your engine make monster horsepower? Maybe that's why Trinity's Monster Horsepower fuel keeps winning—the name! You wouldn't buy "Good Enough Horsepower" fuel, would you? Of course not. Trinity's brew lives up to its name, and it's your purple power pick for a fifth straight year.

2. O'DONNELL RACE FUEL

3. TRAXXAS TOP FUEL



ENGINE

1. TRINITY SIRIO .23

Take .23 power and put it in a "medium small-block" package ... sounds like just the thing for your T-Maxx? Your votes made the call! Sirio's innovative packaging delivers more cubes in a smaller case for big-block power (and then some), without the need for a full-on conversion kit.

2. TRAXXAS TRX 2.5

3. O.S. ENGINES .18 TZ



TIRE

1. PRO-LINE 40 SERIES BOW TIE

Looks like Pro-Line is rolling over the competition. Ugh, lame joke. Great tires, though—and yet another win for the ever-popular 40 Series line. This time, you guys went formal with the Bow Tie mode. We weren't surprised since it's pretty much the default monster-truck racing tire these days. Did you know that no other brand has ever won the tire category? It's true.

2. TAKE OFF CS-27

3. TEAM SOREX 28R





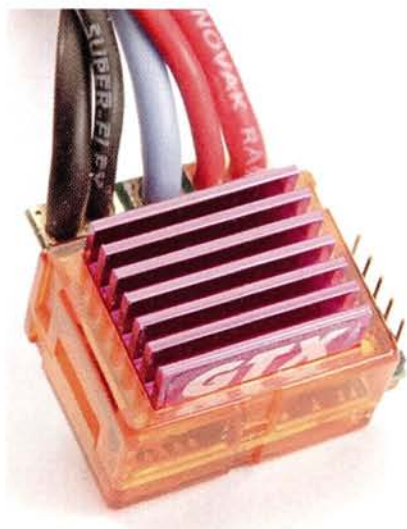
CHARGER

1. LRP PULSAR COMPETITION 2

This makes three in a row for LRP, and it's the first win for the new Competition 2 version of the popular Pulsar. What's not to like? It's compact, runs your lathe, breaks in your motors, let's you know when there's a power interruption ... hmmm, sounds like the Pulsar would make an ideal girlfriend.

2. DURATRAX INTELLIPEAK ICE

3. COMPETITION ELECTRONICS TURBO 35 GFX



SPEED CONTROL

1. NOVAK GTX

Now it's getting interesting. After a huge upset with a loss to LRP in last year's awards, Novak is back with an important win. Now that you've named the fully programmable, Nats-winning GTX as your favorite, the Novak guys can say that they've only missed the top speed-control spot once since we began the Readers' Choice Awards back in 1996. Blue was better, but now orange is best.

2. LRP QUANTUM COMPETITION 2

3. TEAM TEKIN G-10 PRO+



RC INNOVATION

1. SPEKTRUM DSM

Not a big fan of crystals or of changing frequencies, are you? Us neither. We would have picked the Spektrum setup as innovation ourselves, but it's all about what YOU guys like. And we can't blame you for liking the DSM! No crystals, no dials, no nuthin'—just turn it on, and you're running glitch-free with no frequency conflicts.

2. LRP SPHERE SPEED CONTROL

3. TRAXXAS REVO



DRIVER

1. BRIAN KINWALD

BK is back! Brian dominated the Readers' Choice Awards in the early years, then came the "Francis Era," followed by the "Easton Moment," but now you're back with Brian, who is one of racing's biggest names and all-time all-timers. But do you think Brian will just take you back after what you did? You'd better buy him something nice.

2. RYAN CAVALIERI

3. MARC RHEINARD

TEBO UNBEATABLE AT SILVER STATE



PRO 1/8 BUGGY

- | | |
|------------------|---------------------|
| 1 Jared Tebo | Kyosho MP-777 |
| 2 Ryan Cavalieri | Kyosho MP-777 |
| 3 Bobby Tillman | Mugen MBX-5 ProSpec |

PRO 1/10 GAS TRUCK

- | | |
|------------------|------------------------------|
| 1 Jared Tebo | Associated Factory Team GT |
| 2 Ryan Cavalieri | Losi Triple-XNT Adam Drake 2 |
| 3 Adam Drake | Losi Triple-XNT Adam Drake 2 |

SPORTSMAN 1/8 BUGGY

- | | |
|-------------------|-------------------------|
| 1 Greg McGlothlin | Mugen MBX-5 |
| 2 Robbie Damico | Kyosho MP-7.5 Kanai III |
| 3 Jason Sams | Kyosho Inferno MP-777 |

SPORTSMAN 1/10 GAS TRUCK

- | | |
|------------------|------------------------------|
| 1 Danny Greco | Associated Factory Team GT |
| 2 Paul Somarriba | Losi Triple-XNT Adam Drake 2 |
| 3 Bill Harry | Losi Triple-XNT Adam Drake 2 |

MONSTER TRUCK

- | | |
|-----------------|--------------------------|
| 1 Atsushi Hara | Hot Bodies Lightning Pro |
| 2 Matt Gosche | Hot Bodies Lightning Pro |
| 3 Bobby Tillman | Mugen MBX-5 T |

Team Associated/Kyosho ace Jared Tebo won both Pro classes at the Silver State Nitro Challenge. The Kid started second in the 1/10 Pro class Main, battled early with The Drake and eventually settled his O'Donnell-powered Factory Team GT into the lead. Trinity's hard-charging Ryan Cavalieri duelled with Tebo in the back half of the race. The two must have swapped spots a dozen times, and it was an edge-of-your-seat thriller as Tebo got a better run down the nasty, rutted back straight on the last lap to sneak by for a 1.1-second victory over Pudge.

In 1/8 Pro, Tebo had troubles during qualifying and was forced to bump up from the B-main. He won the B, which earned him the 12th-place spot on the A-main grid. Early on, it looked as though TQ Mark Pavidis would check out and win, but an early flameout forced him to the back of the pack. Tebo sliced and carved through the field with surgical precision as he picked off the other racers. As the clock wound down, Cavalieri was in second and closing the gap, but he wasn't fast enough to catch The Kid.

CAVALIERI JOINS ASSOCIATED

Longtime Losi racer and podium regular Ryan Cavalieri will be making the switch to the A-Team for the remainder of the '05 season. Pudge will



run both gas and electric cars for Associated, but he doesn't plan to make any changes in the power department: he's sticking with Trinity motors and batteries and Sirio engines. Ryan's racing schedule should be booked pretty solid, as he also runs an Inferno 777 for Kyosho. Associated, Trinity, Sirio and Kyosho—that's a lot of T-shirts to pack.

TAMIYA GRABS SPASHETT

Looks as if Tamiya is beefing up its already strong TRF squad. David Spashett has just signed with the Big T, where he will join current IFMAR TC Champ Marc Rheinard. No shakeups in the power department for David; he's sticking with Peak motors and batteries.



PRO POLL

Monster truck racing. Gimme a quote.

"The American market loves trucks, and racing them is only going to get bigger and better."
—King Richard Saxton



"They're a lot of fun, but you can't push 'em as hard as buggies when you want to get away from someone. I think the class will really grow with the new, longer trucks."
—Chad Bradley (Monster Truck winner, The Dirt Nitro Challenge)



"I think it definitely has shown signs of growth; its getting more entry-level people into racing. The more new racers, the better it is for the industry."
—Adam Drake

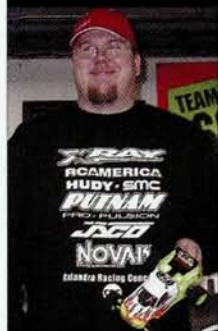


"I think it's good because it may take the place of the 1/10-scale class. The only drawback is that the events are getting longer and longer. People can relate to them better because they are fun to watch."
—Mark Pavidis

EAST-COAST CREW ROCKS 1/18 NATS

The first-ever 1/18-Scale Truck Nationals was held at RC Madness in Enfield CT. Eric Desrosiers took home first place in the 4WD Stock and 4WD Mod classes with his Associated RC18T, while Mark Smyka dominated 2WD Stock and 2WD Mod with his Losi Mini-T. Other winners of the weekend included Rich Johnson (SMC 1/40 Stadium Truck),

Zack Barry (Novice), Jeff Wineholt (Castle Creations 4WD brushless), Tim Mohr (Castle Creations 2WD Brushless and DuraTrax Mini Monster), and Neil Dickey (Race Prep E-Maxx). Good racin, guys, and a big thanks to RC Madness, Chris Marcy and Team Associated for putting the race together.



Above: Mark Smyka, 2WD Stock and Mod man.
Right: Eric Desrosiers, 4WD Stock and Mod champ.



RACERS' RIDES

Brent Thielke >> Infinity G35

Team Associated team manager and all-around good guy Brent Thielke must be making some coin for taking care of the A-team racers. His brand-new G35 is dialed! It looks like he wants to be like former Team Losi team manager Richard Trujillo (remember Trujillo's G35 from a few months back?). Thielke's G35 has a leather interior, a 6-disc CD changer and a rockin' stock stereo system. He plans to install blue-anodized, A-team turnbuckles and an anodized motor mount No, seriously, he has no plans to upgrade with aftermarket parts since it's already "next level".



SITSEEEING >>>

grandmotorsports.com

latest kits and accessories. Hardcore drag racer, occasional RC Car Action contributor and former Associated graphic designer Mike Ogle now owns the company, so get ready to see some new stuff at this high-quality site.



RYAN FLYIN' AT LOSI CHAMPS

Tampa, FL: Ryan Cavalieri, fresh from his move to Team Associated, dominated the 4th annual Team Losi Off-Road Championships. Ryan TQ'd and won all the Factory electric classes with

FACTORY 2WD

1 Ryan Cavalieri	Associated Factory Team B4
2 Travis Amezcua	Team Losi Triple-X BK2
3 Matt Francis	Team Losi Triple-X BK2

FACTORY MOD TRUCK

1 Ryan Cavalieri	Associated Factory Team T4
2 Brian Kinwald	Team Losi Triple-XT MF2
3 Travis Amezcua	Team Losi Triple-XT MF2

FACTORY 4WD MOD

1 Ryan Cavalieri	J-Concepts B4
2 Travis Amezcua	Team Losi Triple-X4
3 Adam Drake	Team Losi Triple-X4

FACTORY NITRO TRUCK

1 Adam Drake	Team Losi Adam Drake 2
2 Jared Tebo	Associated Factory Team GT
3 Ryan Cavalieri	Associated Factory Team GT

PRO MODS >>>

High-vis wheels

Jeremy Kortz Team Kyosho

Color the wheel-nut recess of your buggy rims with a black Sharpie. It makes them easier to see from a distance, so you can better judge what the car is doing. It works; the wheels really pop.



GOT A STORY FOR RACER NEWS?

Contact Jason Sams at jasons@airage.com.

UNDER THE HOOD

Jared Tebo's Associated Factory Team B4

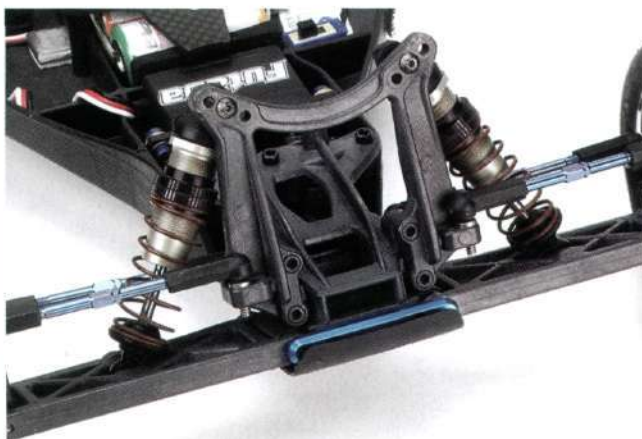
RACE: CACTUS CLASSIC 2WD MOD CHAMP

RACE GEAR

Transmitter Futaba 3PK
Receiver Futaba R203HF FM
Servo Futaba S9451Digital
ESC LRP Quantum Competition 2
Battery Team Checkpoint GP 3300
Motor Team Checkpoint 10x1
Motor brushes Checkpoint

Motor springs Checkpoint
Tires (F/R) Losi Silver Taper Pins/
Losi Red BK Bars
Inserts (F/R) Stock/Pro-Line 2-stage
Body J Concepts Illuzion Scoopless
Gearing 23/84

SETUP	FRONT	REAR
Camber	1 deg. negative	1 deg. negative
Caster/anti-squat	25	Stock
Toe-in	0	1.5
Bump steer washers	2	-
Axle height	Down	-
Steering block	Trailing	-
Wheelbase	-	Medium
Shock oil	40	35
Shock piston	1	2
Shock spring	AE Brown	AE Silver
Limiters	0.060	0.030
Shock mount (tower)	Hole no. 2	Hole no. 1
Shock mount (susp. arm)	Outside	Inside
Camber-link ball-stud mount	Hole no. 2	Hole no. 2
Ball-stud mount (outside)	Hole B	Hole B
Camber-link ball-stud washers	None	None
Swaybar	None	None
Battery placement	Middle	-
Wing angle	-	6 deg.



The brown springs are the only optional items Jared installed on his FTB4. This car went from the track to the studio without even being wiped down.



FIND IT

» Go to page 234 for manufacturers' contact information



According to Jared, he didn't have to cut the comm on his Checkpoint motor during the Cactus Classic. Check out the small C-clip that secures the bearing to the motor can; pop off the pin, and just remove the bearing for maintenance.



Factory Driver HOT MOD

Jared glued a piece of foam rubber to the bottom of the graphite battery strap to hold the battery pack in place more securely. Since the battery pack can't jiggle around, it's less likely to be damaged.



Like the blue-anodized battery-strap nuts? Sorry, they're only for Team drivers, so you can't buy 'em. Note the Velcro® on the chassis—Jared doesn't use body clips.

5 QUESTIONS

DRIVER: JARED TEBO

AGE: 18

LAST BIG WIN: PRO-LINE CACTUS CLASSIC

SPONSORS: ASSOCIATED, CHECKPOINT, FUTABA, GRP, TREADZ, J-CONCEPTS, LRP, MIP AND MAX SPEED DESIGN



WHEN I'M NOT RACING I LIKE TO: RIDE MY DIRT BIKE AND GO MOUNTAIN BIKING.

RC CAR ACTION: Way to go on your win at the Cactus Classic and The Dirt Nitro Challenge and Silver State Nitro Challenge, for that matter. You've competed at three major off-road races in a row and a couple of them were on back-to-back weekends. How do you juggle your race schedule, school and your personal life?

JARED TEBO: When the racing schedule gets hectic, I focus on school, and my dad gets all my racing stuff ready. School is my number-one priority; everything else is secondary.

RCCA: You're best-known for nitro off-road racing, but you've proven that you can win against the best electric racers. Do you use the same racing tactics and driving style for both types of powerplant, or do they require different strategies?

JT: The Mains are much shorter in electric racing, so you have to make your moves asap. In gas racing, you have 45 minutes or more, so you can wait longer for something to happen. Other than that, both are very similar.

RCCA: When did you sign with Checkpoint? How is it working out for you?

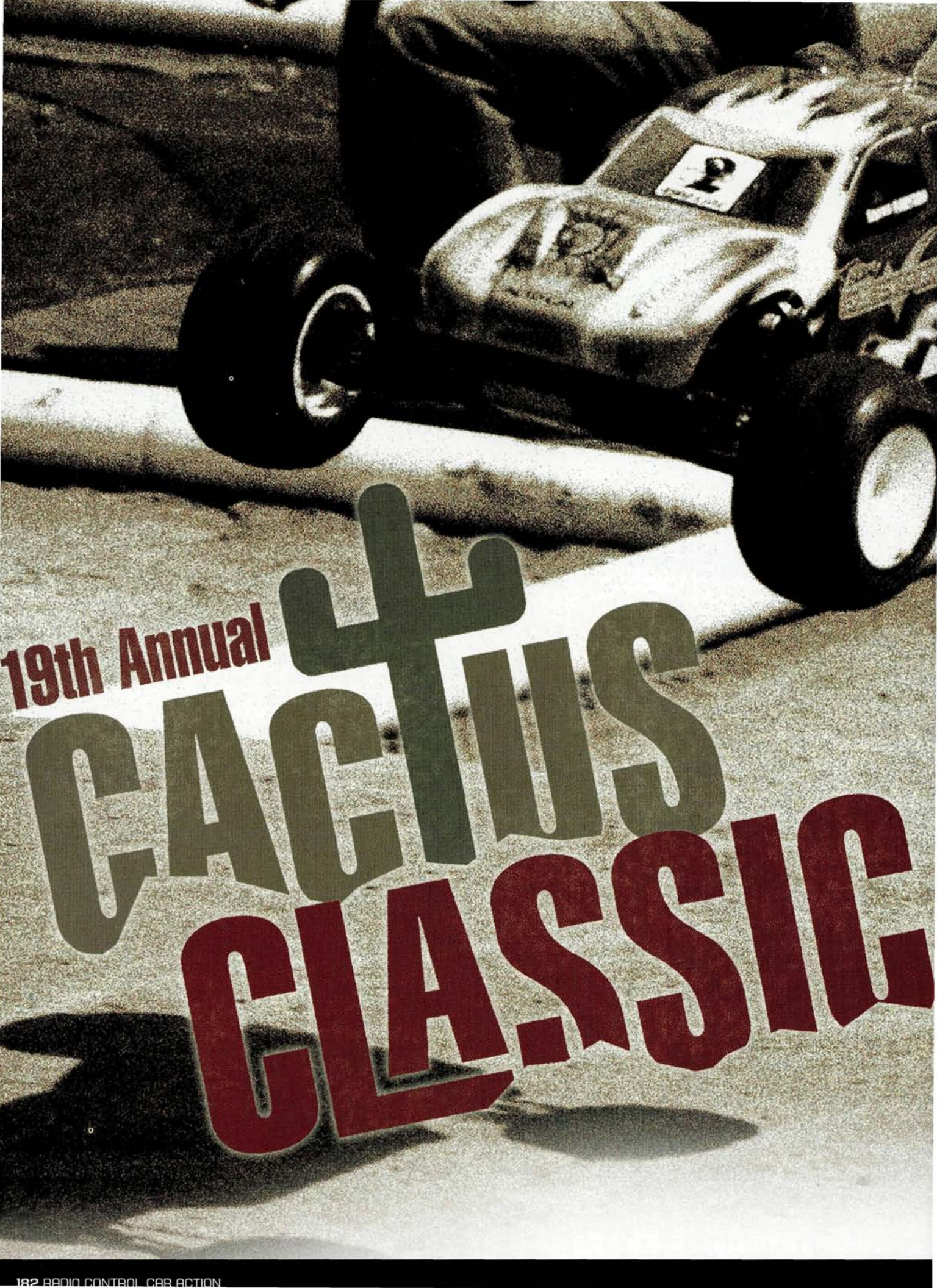
JT: I started running Checkpoint a week before the Cactus Classic. Its motors and batteries are awesome. I say that because I get 10 minutes or more of run time during practice, and we never had to cut any coms all weekend. The motors are almost maintenance-free.

RCCA: If you had to race in only one class, which would you choose?

JT: I would run 1/10-scale gas truck because it requires more skill and finesse to keep them on all fours on the rough tracks. The competition is also more intense in the gas-truck class.

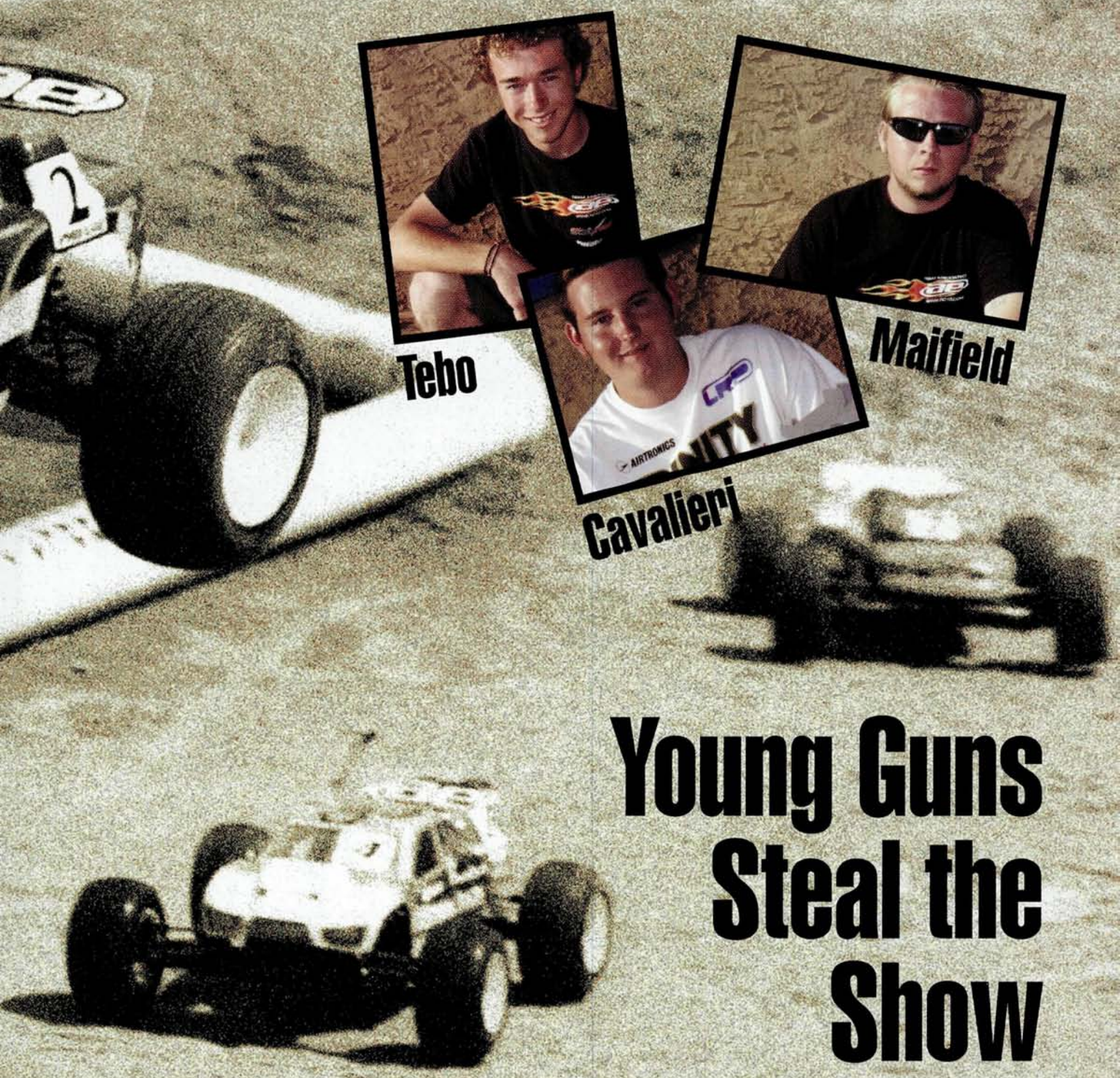
RCCA: Your father is very dedicated to your racing activities. Does he do all of the wrenching, or do you dig in and break out the tools from time to time? Do you guys ever argue about setups or driving strategies?

JT: I do some wrenching at my house, but if weren't for my dad, I wouldn't be racing—at least not at the level I'm at now. When I tell my dad that my car isn't handling the way it should, he usually tells me it's my driving. Unfortunately, he's usually right. It's very frustrating when I'm wrong! ■



19th Annual

CACTUS CLASSIC



Tebo

Maifield

Cavalieri

Young Guns Steal the Show

By George M. Gonzalez || Photos by George M. Gonzalez

THE PRO-LINE CACTUS CLASSIC IS ONE of the most popular electric off-road races of the season, and it's one of the oldest events, too; Scottsdale RC Raceway in Scottsdale, AZ, has hosted the Cactus Classic for 19 years. Although much has changed over the years, two things remain the same: the venue continues to attract the best racers from around the country, and the action during the triple A-mains is always fierce.

This year's race was no exception; a talented field of pros and local hotshots brought their best games to Scottsdale for nail-biting racing action throughout the weekend. The biggest surprises came in the Mod classes where the tables turned in favor of RC's fastest teenage racers, and the thriving 4WD class had five manufacturers vying for a Cactus Classic championship.

» RACE SPECS

Location: Scottsdale RC Raceway » Scottsdale, AZ »
scottsdalerc.com

Primary sponsors: Pro-Line and RC Car Action

Classes: 2WD Stock, 19-Turn Mod and Mod, Truck Stock
19-Turn Mod and Mod, Old Man Truck Stock and 4WD Mod

Qualifying: IFMAR-style, 3 rounds

Mains: triple A-mains in the Mod classes and single A-mains
in the Stock classes

Handout motor: none

Handout tire: none

» A-Main Action

2WD STOCK

Top qualifier & winner: Aaron Lane » Associated B4

SoCal racer Aaron Lane had his Associated B4 dialed on the hard-packed track surface and was in a class all his own during qualifying. Aaron got the holeshot at the start of the Main and never looked back until he finished with a huge 10-second margin. Mack Mitchell took second while Phillip Gibson claimed third.

2WD 19-TURN MOD

Top qualifier: Mike Friery » Losi Triple-X Brian Kinwald 2

Winner: Ben Bustamante » Associated Factory Team B4

Phoenix/Scottsdale local Mike Friery qualified a full 5 seconds faster than second-place qualifier Ben Bustamante, but things didn't go well for him in the Mains. He got a bad start during the first Main and ended up finishing in eighth place. Bustamante cruised in to take the win with a cushy 6-second lead and then won the second Main to wrap up the 19-Turn Mod title.



Kyosho's 4WD Laser Prototype looked good, but it didn't make it into the A-main. I'm sure we'll see a lot more of this car once the production kits hit our shores.



2WD EXPERT MOD

Top qualifier: Ryan Cavalieri » Losi Triple-XT Matt Francis 2

Winner: Jared Tebo » Associated Factory Team B4

Team Trinity's Ryan Cavalieri found himself in a battle with Jared Tebo in the first Main and lost his position after a poorly timed bobble. Tebo capitalized on the mistake and took the lead and the win. Neil Cragg, who traveled all the way from England, got off to a great start in the second Main and managed to get around Cavalieri and Tebo to take the win. Tebo took the win in the third Main to secure the overall championship.

OLD MAN TRUCK STOCK

Top qualifier: Louis Fernandez » Losi Triple-XT
Matt Francis Edition

Winner: Bill Koch » Losi Triple-XT Matt Francis Edition

Louis Fernandez got the holeshot and led the race most of the way while Bill Koch and John Henry flanked him the entire time. A slight bobble cost Fernandez the lead, and Koch was right there to take command of the race. Fernandez made a hard charge back, but Koch kept him at bay and rolled across the finish line first.

TRUCK STOCK

Top qualifier: James Gallatin » Losi Triple-XT Matt Francis 2

Winner: Aaron Lane » Associated T4

James Gallatin was in top form during qualifying, but things didn't go as well in the Main. After the first lap, Aaron Lane found his way around Gallatin and quickly gained a considerable lead. Gallatin got back into the game and battled Lane for a few laps, but he was never given the opportunity to pass. Lane took the win and went home with two first-place plaques.

TRUCK 19-TURN MOD

Top qualifier & winner: Mac Mitchell » Losi Triple-XT
Matt Francis 2

Scottsdale local Mac Mitchell set the TQ pace in the first round of qualifying, and nobody was able to top it. Mitchell was hardly challenged in the first Main and took an easy win. In the second Main, Brayden Sundstrand got around Mitchell on the very last lap to steal the win. The third Main would ultimately determine the racers' fates. Mike Fiery came out of nowhere to win, and after the points had been counted, Mitchell took the overall victory.



Left: Kyosho flew in a support team from Japan to continue testing its new 2WD and 4WD off-road prototypes. Hey, isn't that Masami Hirosaka's dad (right) with a Kyosho T-shirt?

Right: young Joern Neumann flew in from Germany to compete at the Cactus Classic. Joern is a European 4WD champ, and he proved it by qualifying in the 4WD Mod A-main with his Durango buggy.

TRUCK EXPERT MOD

Top qualifier and winner: Ryan Cavalieri » Losi Triple-XT
Matt Francis 2

Team Losi/Trinity driver Cavalieri was clearly in a class of his own. He was the only driver to post 12 laps in 5 minutes flat—a second quicker, and he would have gone 13 laps. Cavalieri was challenged by European driver Neil Cragg in the first two Mains, but he kept it in control and finished first in both to take the overall championship. Cragg dominated the third Main, and that put him over the top for second place. Ryan Maifield secured third.

4WD MOD

Top qualifier and winner: Ryan Maifield » J-Concepts BJ4
Ryan Maifield barely edged out Ryan Cavalieri during qualifying to take the TQ. During the Mains, it was all Maifield, though. Maifield got the holeshot in the first two Mains and didn't look back until his J-Concepts BJ4 crossed the finish line. Cavalieri, with second- and third-place finishes, had enough points to secure second. Team Losi/Trinity's Travis Amezcua finished third overall.

WRAP-UP

As always, attending the Cactus Classic was a gas. The weather was much cooler than in the previous years, so it was easier to wrench and race, and the track layout was as challenging as ever. Congratulations to the young Mod-class champions Jared Tebo, Ryan Cavalieri and Ryan Maifield. These guys are barely old enough to drive a real car, and they're already at the top of the RC game. We also thank the entire staff at Scottsdale RC Raceway for putting on a first-class show. Next year marks the 20th anniversary of the Cactus Classic; be sure to mark your calendars and sign up early. It will be an event you won't want to miss. ■



Ryan Cavalieri's Losi MF2 was pretty much unstoppable and always up front.

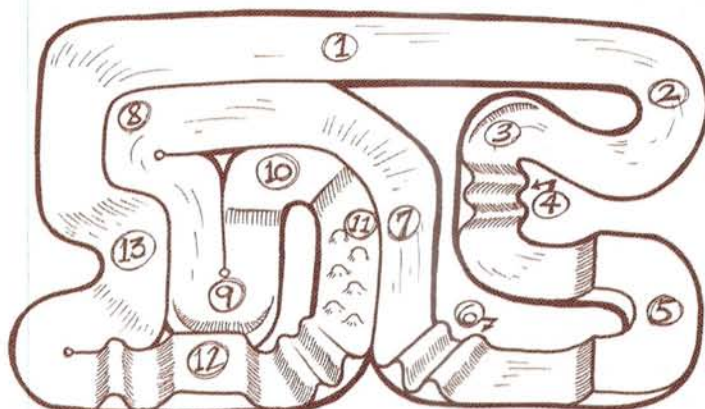


Above: Kyosho's secret 2WD buggy gets some big air over one of the jumps. Mark Pavidis piloted this buggy, but it was whisked away after every heat. It must have been weird not to be able to wrench on your ride.

Left: work hard and get a free car! Derrin Chango worked overtime all weekend to make sure that the track was well maintained, and for his efforts, he was awarded Team Associated engineer Curt Wenger's fully loaded Factory Team B4. Now, that's what I call an incentive!

>> The Track

1. The cars lined up on the long back straightaway and drove in a clockwise direction.
2. The wide, 180-degree right turn sent the cars into the infield.
3. Most of the starting pileups took place on the second corner.
4. A short shoot sent the cars over a set of tightly spaced jumps that were easily doubled even by the stock-class vehicles.
5. Another left turn sent the cars uphill and onto a platform that did not pose any problems for the drivers.
6. The cars drove downhill and were immediately faced with a right-hand bend with a big double jump right smack in the middle.
7. Next came a layered short straight and an off-camber left-hand bend. This tricky section saw the most crashes and taxed the cars' suspensions.
8. Another short straightaway sent the cars into a 180-degree left and then a 90-degree right.
9. The cars carried a lot of speed through the banked 180-degree left turn.
10. This is a Euro-style tabletop, and that was an elevated 90-degree right turn.



11. The mogul section was next. The drivers had to use finesse to get through this section without flipping their cars onto their lids.
12. A set of doubles was followed by a huge tabletop jump. Spectators sitting trackside could easily have reached out and grabbed a car in flight.
13. Another set of switchback turns followed by a sloping right-hand bend brought the cars to the back straightaway.

>> New In The Pits



Pro-Line I spotted Pro-Line's Mark Pavidis gluing up these new 1/8-scale, off-road buggy hoops for the Silver State Nitro Challenge (held the weekend after the Cactus Classic). The new tires do not have a name yet, but as you can see, they have hollow square lugs and center offset bars—looks like they'll provide gobs of forward bite. **Pro-Line;** (909) 849-9781; pro-lineracing.com



Tekin Tekin has updated the old G-10 to the latest specs, and it's now called the G-11 Pro. It has everything racers need, such as one-touch setup, no motor limit, easy onboard programming, adjustable drag brakes, current limiter and patented circuitry. **Team Tekin;** teamtekin.com



Durango 2WD B4 conversion The guys from Durango in Germany showed up with this crazy-looking B4 chassis conversion. The prototype features an ultra-narrow chassis with adjustable, in-line saddle-pack battery mounting. The front and rear ends are from B4 buggy, and they

also have a truck conversion based on the T4 as well.

Durango; durango.rc10.de

>> New 4WD Contenders



Kyosho Laser ZX-S Kyosho has jumped back into the 4WD electric game with the new Laser ZX-S. The car shown here is virtually a full production model. It features a double-deck, carbon-fiber chassis, a dual-belt drivetrain and saddle-pack battery placement. **Kyosho Corp. of America** (800) 716-4518; kyoshoamerica.com



X-Factory X-5 This single-belt conversion kit for the Losi Double-X4 includes a mold-ed chassis, slipper clutch, spur gear, long single belt, diff pulleys and pretty much everything you need to give your retired Double-X4 new life. The conversion requires grinding and hand finishing, so that limits the kit to experienced racers. Greg Hodapp drives one, and he loves it. **X-Factory R/C Racing;** 4wdrc.com.



J-Concepts BJ4 The BJ4 4WD buggy has been tearing up off-road tracks around the U.S. and abroad. Its double-deck, carbon-fiber design provides a rigid backbone, and you can use the same battery packs as you use in your 2WD buggy and truck. Ryan

Maifield won the 4WD Mod class with his BJ4. **J-Concepts;** jconcepts.net

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- fully ball-bearing equipped set-up stands (12 high-precision ball-bearings)
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- CNC-machined, tough acrylic plastic toe/steering plate
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>> The Winners



2WD STOCK



2WD 19-TURN MOD



2WD EXPERT MOD



OLD MAN TRUCK STOCK

2WD STOCK

Fin	Qual	Driver	Chassis	Motor	Battery	ESC	Radio	Tires
1	1	Aaron Lane	Associated B4	Reedy	Fusion	LRP	Airtronics	Losi
2	2	Mac Mitchell	Losi BK2	Peak	Peak	Novak	Airtronics	Losi
3	3	Phillip Gibson	INS	INS	INS	INS	INS	INS
4	8	Frank Root	Losi BK2	BS Motorsports	KMR Batteries	LRP	Airtronics	Losi
5	9	David Paul	Associated FTB4	Race Prep	Peak	Novak	Airtronics	Losi

2WD 19-TURN MOD

1	2	Ben Bustamante	Associated FTB4	Reedy	Reedy	LRP	Airtronics	Losi
2	3	Frank Root	Losi BK2	BS Motorsports	KMR	LRP	Airtronics	Losi
3	1	Mike Friery	Losi BK2	Trinity	Ballistic	LRP	Airtronics	Losi
4	5	Jerry Walter	INS	INS	INS	INS	INS	INS
5	4	Joshua Nelson	Associated FTB4	Birdman	Ballistic	LRP	Airtronics	Losi

2WD EXPERT MOD

1	4	Jared Tebo	Associated FTB4	Check Point	Check Point	LRP	Futaba	Losi
2	1	Ryan Cavalieri	Losi BK2	Trinity	Trinity	LRP	Airtronics	Losi
3	3	Neil Cragg	Associated FTB4	Reedy	Reedy	Nosram	KO	Losi
4	2	Ryan Maifield	Associated FTB4	Reedy	Reedy	LRP	Airtronics	Losi
5	8	Dave Montgomery	Associated FTB4	Reedy	Reedy	LRP	Airtronics	Losi

OLD MAN TRUCK STOCK

1	2	Bill Koch	Losi MF1	Birdman	Pro-Match	Novak	Airtronics	Panther
2	1	Louis Fernandez	Losi MF1	Birdman	Pro-Match	Novak	Airtronics	Panther
3	3	John Henry III	Losi MF2	Trinity	Peak	LRP	Airtronics	Losi
4	6	David Paul	Associated FTT4	Birdman	Team Orion	Tekin	Airtronics	Losi
5	4	Ebi Beck	Associated T4	Banzai	Team Orion	Robitronic	KO Propo	Losi

INS = information not supplied by driver

The Set-up Solution is used to measure and adjust:

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TRUCK STOCK



TRUCK 19-TURN MOD



TRUCK EXPERT MOD



4WD MOD

TRUCK STOCK

Fin	Qual	Driver	Chassis	Motor	Battery	ESC	Radio	Tires
1	2	Aaron Lane	Associated T4	Reedy	Fusion	LRP	Airtronics	Losi
2	1	James Gallatin	Losi MF2	Peak	Ballistic	LRP	Airtronics	Losi
3	3	Albert Guardado	Losi MF2	Peak	Peak	Novak	JR Racing	Losi
4	8	Sean Cahill	Associated T4	Trinity	Team Orion	LRP	Airtronics	Pro/Losi
5	6	Bill Koch	Losi	Birdman	Pro-Match	Novak	Airtronics	Panther

TRUCK 19-TURN MOD

1	1	Mac Mitchell	Losi MF2	Peak	Peak	Novak	Airtronics	Losi
2	3	Josh Nelson	Losi MF2	Birdman	Ballistic	Novak	Airtronics	Losi
3	2	Brayden Sundstrand	Losi MF2	Team Orion	Raceday RC	LRP	Airtronics	Losi
4	8	Mike Friery	Losi MF2	Trinity	Ballistic	LRP	Airtronics	Losi
5	5	Ben Bustamante	INS	INS	INS	INS	INS	INS

TRUCK EXPERT MOD

1	1	Ryan Cavalieri	Losi MF2	Trinity	Trinity	LRP	Airtronics	Losi
2	2	Neil Cragg	Associated FTB4	Reedy	Reedy	Nosram	KO Propo	Pro/Losi
3	3	Ryan Maifield	Associated FTB4	Reedy	Reedy	LRP	Airtronics	Losi
4	7	Travis Amezcua	Losi MF2	Trinity	Trinity	LRP	Airtronics	Losi
5	9	Billy Fischer	Losi MF2	Team Orion	Team Orion	Novak	JR racing	Losi

4WD MOD

1	1	Ryan Maifield	J-Concepts	BJ4	Reedy	LRP	Airtronics	Losi
2	2	Ryan Cavalieri	Losi Triple-X4	Trinity	Trinity	LRP	Airtronics	Losi
3	3	Travis Amezcua	Losi Triple-X4	Trinity	Trinity	LRP	Airtronics	Losi
4	4	Mike Truhe	Losi Triple-X4	Trinity	Trinity	Novak	Airtronics	Losi
5	5	Billy Fischer	Losi Triple-X4	Team Orion	Team Orion	Novak	JR racing	Losi

INS = information not supplied by driver

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- CNC-machined high-grade aluminum stands are hardcoated for increased durability
- CNC-machined toe/steering plate made from tough acrylic plastic
- all components have precision engraving for instant, reliable readings
- carrying box with foam inserts for smart and safe storage and transportation
- unmatched value and long life
- world famous and prestigious Hudy luxurious design and smart innovative solution



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How to pack and prepare for a big "away" race

TRAVELING TO BIG "AWAY" RACES IS ALWAYS A CHALLENGE. Do you take all your gear? If not, which essentials will you need? What if something breaks while you're at the track and you didn't bring the right tool or part to get the job done? Add in the worry of losing all your racing gear along the way on some crazy flight, and these away races don't seem so enticing anymore. But don't sweat it! After reading this column, you'll have learned all the tips and tricks for getting everything you need into your bags and to the race safely.

PACK SMART

»» The first rule of packing is: pack light, pack tight and pack only what you really need. The mission is to pare down all your equipment to just what you'll really use. Don't take your old rolling chassis from two years ago "just in case." Rob it of all the good parts and only take those. Pare down spares to only those that fit your car. Take only battery packs that you would run. Don't take your stock motors unless you're allowed to run your own. Typically, one charger will do, so pick your best one. Take only the tools you'll use—not your entire collection. It's all about keeping it light.

Once you have selected the bare necessities, it's time to decide what to pack this stuff in. If you are flying, airlines typically stipulate no more than three checked bags with one small carry-on, so this allows you to have two RC bags and one with a mix of clothes and RC stuff. Pack your equipment into these bags, and see how far you get before you run out of room.

»» I recommend you get an RC-specific hauler bag like those used by most team drivers (sold by major manufacturers). The best ones include cardboard or plastic boxes inside the nylon bag. These boxes protect the equipment inside, and they force you to pack smart. Ideally, you'll need two of these bags to transport most of your equipment to the race.

»» Pack the bigger and heavier items first, such as chargers, soldering irons, power supplies and the toolbox, and store these in different boxes in the bag to even out the weight. I then pad the heavier items with clean rags. Cotton towels also make great padding (serving two purposes). Next, pack your spare parts, batteries and, if needed, motors. Again, spread out the weight among the boxes, and don't pack fragile items with heavy ones (such as a power supply). When you place items in the boxes, pack everything as tight as you can because shifting contents causes 90 percent of the damage. Pack the boxes tightly and stuff them to the top with towels or bubble pack to help keep their shape when they're stacked on top of each other. In fact, the bottom box should contain the heaviest equipment so it won't be crushed by the boxes on top. If you can't fit everything in, hopefully a travel buddy is going along.

Lightweight tools.

If you travel to lots of races, consider getting a nice set of lightweight tools like these by Hudy with hollowed out handles. Also, if weight becomes an issue while packing, take only the wrenches that fit your car. No matter how light the tools are, they still comprise a sizable percentage of the overall weight of your equipment.



Small power supplies. Novak makes a small and slim 10A power supply that easily fits in most pit boxes.





Ziploc freezer bags. Plastic tackle boxes make great organizers, but some items do better in bags; for instance, store your spare parts in Ziploc bags. Freezer bags work best because they are thick and won't rip as easily as the non-freezer type. Use sandwich-size bags to organize small parts and giant-size bags to group small bags together. A bag will conform to just about any shape and can easily be stuffed into your pit box or luggage.



When packing your pit boxes, stuff towels (or rags) around bulky items so they won't shift around during travel.

Don't go over-weight.

I agree that packing a bag with a few extra pounds is cheaper than the cost of an extra bag, but heavier bags tend to sustain more damage during transit as baggage handlers drag and heave them onto and off conveyer belts. It's better to pack three lighter bags than two over-weight bags.

Joel's Personal Packing Tips



RC stuff and clothes do mix. If you run out of room, consider packing heavy or bulky items such as power supplies, bodies and tool boxes in with your clothes. The clothing will protect these items from damage, and you will maximize your available baggage space.

To save room, take only the tools that you know you will use at the track. There are plenty of compact tackle boxes that will securely hold your tools.

No flammables.

Don't even think about carrying cans of tire traction, motor spray, or any other type of flammable item! Buy these things at the track, or ship them by ground UPS, USPS or FedEx, and save yourself some major headaches.



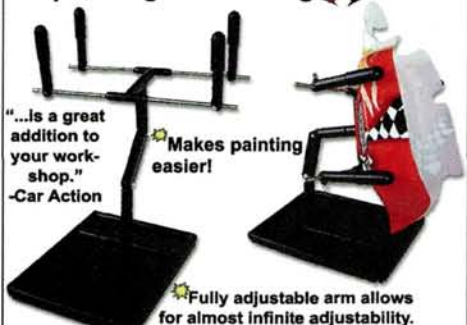
The X-ray machine. Don't worry about X-raying your transmitter and car at the airport. No damage will occur to the electronics. Just be ready to answer some questions about your transmitter, and be ready to demonstrate how it works and that it turns on!

Flip your body upside-down and fill it with lightweight items so the body won't be crushed. It's amazing how many items you can actually stuff into the shell of the body to help save some room.

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joel's bench

Burning questions

When you decide to travel to a distant race, contact that racetrack to see what its facilities offer. Once you have all the answers to the questions below, you'll have laid the groundwork for a great race week or weekend.

- >>> Does the track have AC power?
- >>> Are tables and chairs available?
- >>> Will there be covered pit areas?
- >>> Does the hotel supply rags in the rooms (hotel race)?
- >>> Will a tire truer be available for out-of-town racers?
- >>> Which tires are most commonly used?
- >>> Will handout motors be used?
- >>> To which address can I ship equipment for the race?
- >>> Is someone there to sign for shipped boxes?
- >>> Will concessions (i.e., food) and parts be available at the race? (Watch this one, as some tracks have a less than stellar selection of parts, so always confirm what you want to buy, or take along what you need.)
- >>> Which hotel is closest to the track?
- >>> And, does anyone in the local club know how to hack into the hotel cable box to get free movies?

TRAVEL BUDDY

If you are traveling to the race with a buddy, consider doubling up on the heavier things (like huge power supplies) and sharing the amps. As a team, you can pack more parts, but don't ever pack your transmitter and car together with all your parts. I always carry with me what is hardest to replace—for me, that's my transmitter and chassis; others carry their batteries. Again, if you are flying to the event, put these items into your



Store your radio and chassis inside your carry-on bag if you have to fly to a race. It's nice to know your transmitter isn't being bounced around in some cargo bay.

as tires, tire truers, lamps, etc., or buy them at your destination. The last resort is to ship some items to the race with UPS, USPS or FedEx, but expense is a problem as well as shipping them back. Always confirm that someone will ship these items back to you, and work out a form of payment in advance.

FIND IT

>>> Go to page 234 for manufacturers' contact information

HEAVYWEIGHT BAG

Once everything is packed, it's time to weigh the bags. Fifty pounds is the limit on all domestic airlines, and they're keeping a close eye on luggage these days, so watch it. Extra pounds over 50 cost about a dollar a pound, so keep weight close to the limit. You might consider using a third bag instead of over-packing two (see sidebar). Next, secure the zippers on the bags with something that can be reused. Nowadays, bags are frequently inspected, and RC stuff always looks interesting on X-ray; so to get into your bags, screeners will cut off anything that cannot be removed easily. There are several solutions to this: I like to use mini carabiners from a sporting-goods store, but even a safety pin works. Bottom line, keep the zipper tied with something that is reusable.

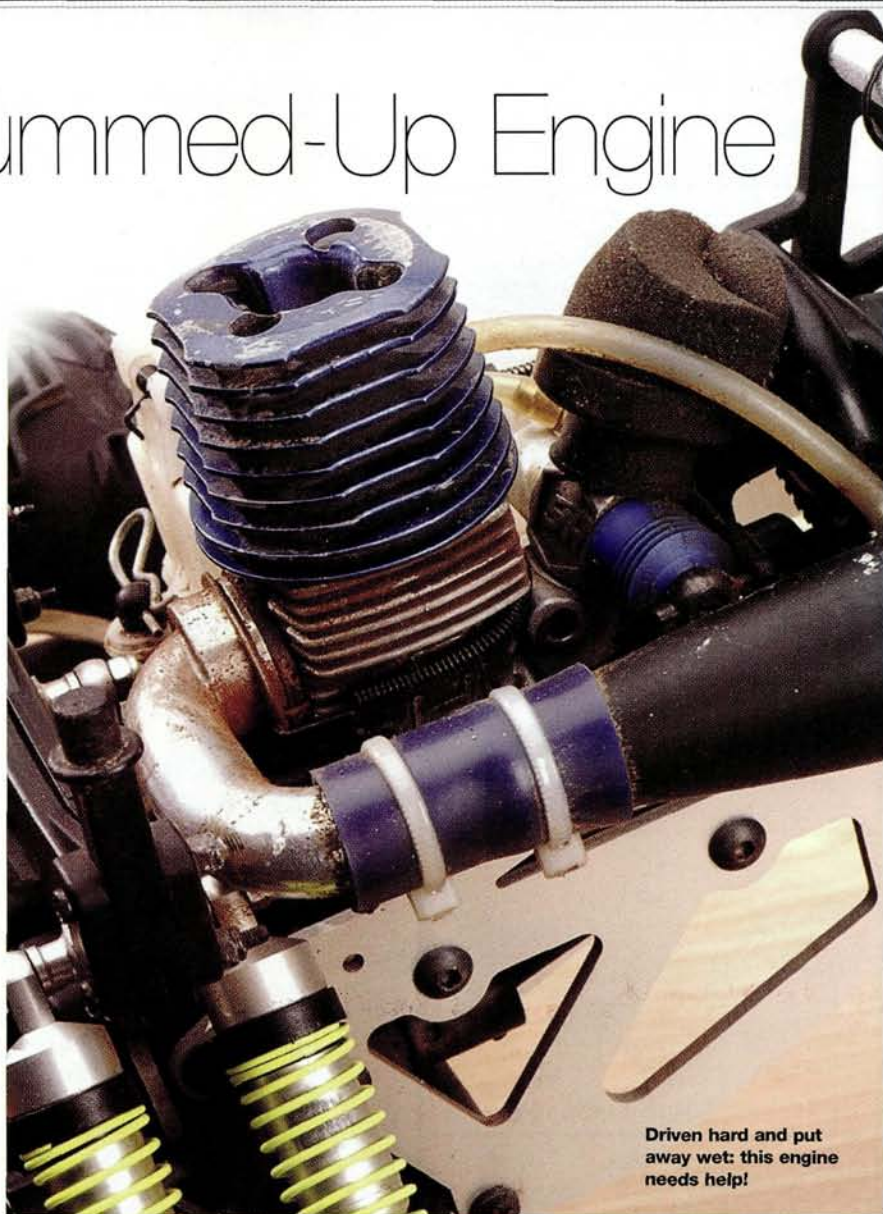
If you follow these guidelines, I can say without hesitation that your equipment will arrive undamaged and ready to go racing. Remember, to finish first, first your equipment must arrive undamaged. ■

Revive a Gummed-Up Engine

IT HAPPENS ALL THE TIME. Your engine ran perfectly when you last used it, but because you forgot to use after-run oil, the crank is now really hard to turn, or it may even be stuck. That means the engine is gummed up. How did this happen? When the unburned fuel you left in the engine evaporated, it left a thick residue that coated all the internals and stuck them together. Don't worry: there is a simple solution to this problem. We'll use old fuel as a solvent to loosen up all the sticky stuff and get the engine back into action.

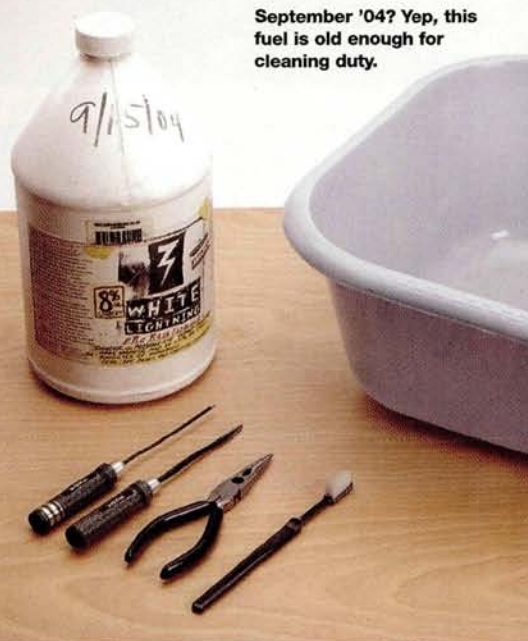
YOU'LL NEED

- A container deep enough to cover the engine with liquid. The bottom half of a gallon fuel jug will work fine for this.
- Old fuel. I always hang on to old fuel that I know I won't run in a car, just for this purpose.
- An old toothbrush.



Driven hard and put away wet: this engine needs help!

September '04? Yep, this fuel is old enough for cleaning duty.



Knock off any loose debris with a brush before moving on to engine dissassembly.

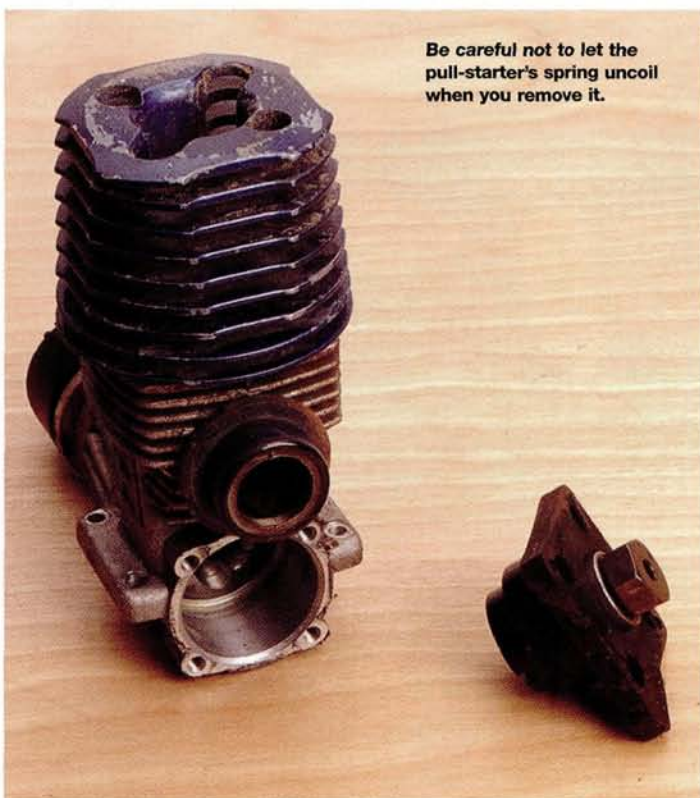


1 IF THE ENGINE IS STILL MOUNTED ON A CHASSIS, disconnect the linkages and fuel lines and remove the engine from the car. This will also make it easier to clean the chassis (as you should have before you put it away last time).



Removing the carburetor will allow fuel to flow through the crankcase more easily.

2 REMOVE THE CARBURETOR. It's best to take it off so that as much fuel as possible can get into the crankcase. If you also want to soak the carb, first remove the slide boot.



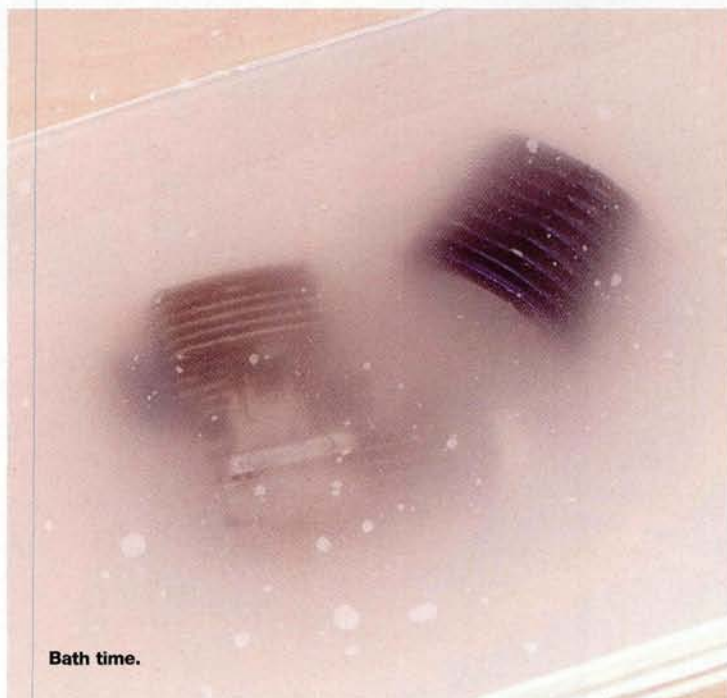
Be careful not to let the pull-starter's spring uncoil when you remove it.

3 REMOVE THE PULL-STARTER, if the engine is so equipped. Be careful with this step because some pull-starters tend to "un-spring" if not taken off with care. Remove the four screws that hold it in place, and insert a thin, flat-blade screwdriver between the pull-starter and the engine's backplate. Use the screwdriver to hold together the pull-starter's internals as you pull the assembly off. If there is a one-way bearing on the end of the crankshaft, note its orientation and put it aside with the other pieces.

4 REMOVE THE BACKPLATE AND THE COOLING HEAD. Submerge the engine in enough fuel to completely cover it. After you've put it into the container, flip the engine over a couple of times to release all of the air bubbles from the crankcase. You can also throw the cooling head in there (with the glow plug removed) to clean it.

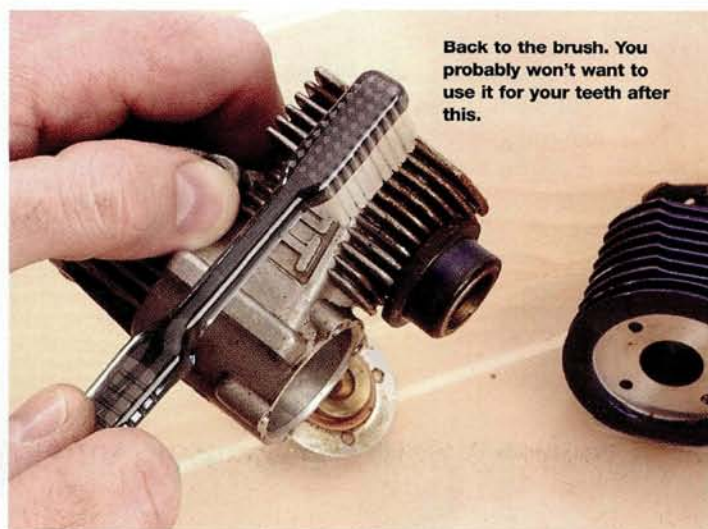


Blech! The engine will never run with that gunk in there.



Bath time.

5 LET THE ENGINE SIT IN THE FUEL FOR A COUPLE OF HOURS, and then check to see whether the gummed-up parts have loosened up. I have had to let some engines sit overnight, so be patient. A safety reminder here: be sure to cover the container and place it where small children and animals cannot access it.



Back to the brush. You probably won't want to use it for your teeth after this.

6 **ONCE YOU CAN FREELY MOVE THE CRANK,** use an old toothbrush to clean the crankcase externals. Be sure to flush it out with clean fuel afterward so you don't leave any abrasive gunk inside.

FIND IT

»» Go to page 234 for manufacturers' contact information

7 **REASSEMBLE YOUR ENGINE,** mount it back in the car and fire it up!



If the engine parts don't loosen up after you've gone through the de-gumming process—even after letting the engine soak for a couple of days—you might have other problems. But these steps should work most of the time for an engine that's in generally decent (but dirty) condition. It may take a tank or two of running before everything is loosened up 100 percent, but you should be able to revive the engine so it will operate very close to the same level of performance as it did when you put it away. Now keep it clean! ■



DUBRO

RACING

BEEP



E/Z Glo

Glo-Plug Ignitor w/ Beep Tester

This is a revolutionary ignitor and glo-plug tester. The E/Z Glo will not only effectively ignite your models glo-plug, but will also test it and report its condition with an audible beep. Simply connect the E/Z Glo to your glo-plug, press the test button and listen for the beep. If you hear a beep, the plug is good. If there is no beep, the plug is bad. The E/Z Glo comes with a 1700 mAh battery & charger. The battery is also replaceable.

Cat. No. 927

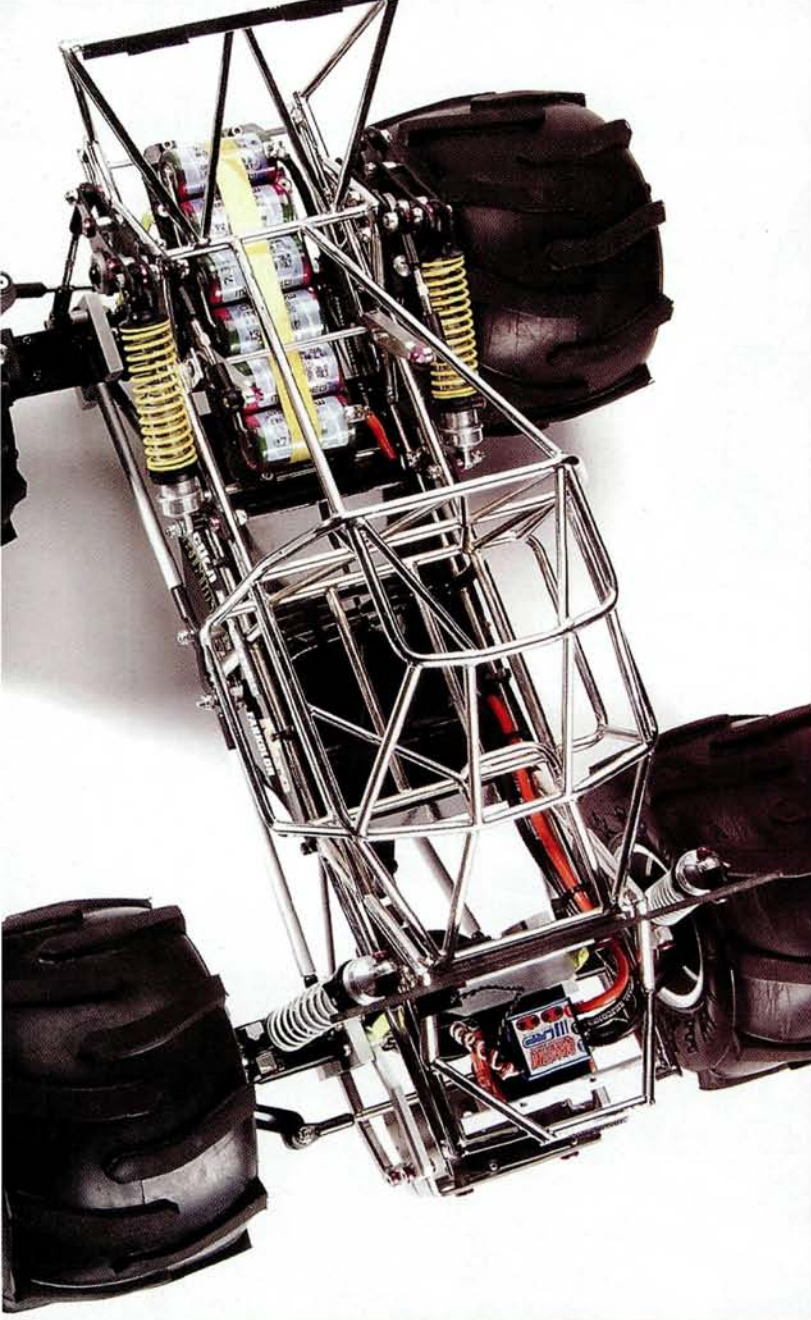
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Every year, the WRAM (Westchester Radio AeroModelers) hobby show in White Plains, NY is a big deal for RC fans in the Northeast. In addition to the usual displays, the show also hosts an indoor monster truck race on a tight concrete course. I figured it was time I showed up with a new rig to show those boys how it's done. I could have reworked one of the Clod Busters in my collection, but that would have been too easy. I had been working on a few designs of my own, and I figured that this would be a good opportunity to see if all the designs I had been playing with would actually work. I started out with a pair of Tamiya TXT-1 axles and a dream. After a lot of thinking, some CAD time and a bunch of machining, I had the truck you see here: a completely original tube-frame truck with hybrid suspension, a custom transmission and full tunability.

PROJECT WRAM Charger





Above: I built the chassis to be realistic and functional. It's constructed out of brass tube and silver solder. **Below:** the battery mount is made out of carbon-fiber. Strapping tape ensures that the battery is secure at all times. **Below right:** except for the shocks and the swaybar, all of the suspension components are custom-made.

CHASSIS

I wanted my truck to closely resemble the real deal, so I bought a die-cast model of the full-size Bigfoot monster truck to use as my reference for the chassis. After I picked out a body—a Pro-Line F-350—and chose the wheelbase I wanted the truck to have, I began to design the chassis in AutoCad. Once I was happy with the design, I printed out a full-size drawing to use as a template. Most of the chassis is constructed out of 1/4-inch brass tube assembled with silver solder. When I was happy with the design of the chassis, and everything fit the way it was supposed to, I built the roll cage out of brass tube and fit it to the body. The chassis is pretty well balanced: the motors are in the center, the battery is in the back and the steering servo, receiver and speed control are in front.

SUSPENSION

The four-link suspension is also my own design. The suspension-arm mounts on the axles are machined out of 1/4-inch aluminum and held in place by screws that come out of the axle housing. I machined the suspension links out of 1/4-inch aluminum round stock and installed DuBro ball ends to connect them to the chassis and axles. Carbon-fiber plates cut from Art's Hobbies 3mm-graphite blanks provide a mounting location for the side links, and the lower links are bolted to a 1/4-inch aluminum square stock. You'll notice that the truck has cantilevered rear shocks and standard mounting in front for greater rear travel. Trucks typically land off jumps on their rear tires first, and I wanted more travel to absorb that impact. Each cantilever is supported by two ball bearings, and two mounting positions for each shock allow you to adjust the suspension travel. Like the chassis' side plates, the shock tower and cantis are cut out of Art's Hobbies graphite blanks. The cantilever pivots are actually Traxxas aluminum pivots for the Revo. With my lathe, I shortened them and removed their threaded sections. I drilled them out and sent a 4-40 tap through them so I could mount them on the chassis. Because I run cantilevers in the rear, I had to install a swaybar to prevent the chassis from swaying from side to side. Thunder Tech Racing's Ripper swaybar works well, looks great and was one less thing I had to make. Kyosho 1/8-scale buggy shocks provide the damping all around; I stripped off the anodizing and polished them to match the finish of the chassis. Kyosho yellow springs support the rear of the truck, and gray Losi truck springs hold up the front.



STEERING

I used a set of aluminum Juggernaut 2 bumpers from New Era as my servo mount. They're much more rigid than the stock plastic parts and much lighter than the aluminum units offered for the TXT-1. The bash plate is also a modified Juggernaut piece, and Tamiya aluminum mounts hold the servo. Thunder Tech Racing axle wideners improve the steering of the TXT-1 axles.

DRIVETRAIN

The transmission is fully boxed to shield it from prying eyes until the patent for my custom design comes through. *[Editor's note: I told Kev he was being ridiculous, but he insisted on keeping this thing a secret. Even I don't know what it looks like!—Pete]* I can say that Traxxas T-Maxx driveshafts connect the transmission to the Tamiya TXT-1 axles, but that's all I'm giving up.

BODY, WHEELS AND TIRES

I shipped the Pro-Line F-350 body off to Bill Zegers to have it painted. After I got it back, I cut out the side and rear windows so it would look a little more realistic. I made a tonneau cover out of a sheet of Parma Lexan. When I was happy with the shape, I covered it with thin black cloth and attached it to the body using clear silicone. While I had the Lexan out, I made a wing for the back end.

When it comes to choosing tires for WRAM-style racing, weight is more important than looks. Stock TXT-1 tires look more like the ones used on a full-size monster truck, but they're a little too heavy. A set of Imex puller tires were the ticket! They don't weigh much and provide plenty of traction. They are mounted on a set of Tamiya TXT-1 wheels.

ELECTRONICS

I installed two Trinity 12-turn cobalt motors and wired them in parallel for maximum power (it's equivalent to running a single, 6-turn motor). A 6-cell Trinity GP3300 matched pack provides the juice, and an LRP Quantum speed control receives commands from a Novak XXtra receiver. For steering power, I chose an Airtronics 94359Z servo, and my trusty Airtronics M8 radio connects me to the truck.

FIND IT

>>> Go to page 234 for manufacturers' contact information

PARTS

Tamiya

TXT-1—item no. 58280; \$345

CHASSIS

Art's Hobbies

- 3mm carbon-fiber plate (2)—CFPLT30; \$40

K&S Engineering

- ¼ in. brass tube (8 ft.)—131; \$10
- ⅜ in. brass tube (8 ft.)—129; \$10

SUSPENSION

Kyosho

- Rear shock set—IFW141; \$60
- Ultrasoft spring—KYOC5493; \$16

DuBro

- Heavy-duty ball links—899; \$4

Traxxas

- Aluminum rocker posts—5354X; \$12

DRIVETRAIN

Traxxas

- T-Maxx half shafts—4951X; \$8
- Transmission output yokes—4927X; \$6

ELECTRONICS

Airtronics

- Steering servo—94359Z; \$140
- M8 radio—90280TX; \$195

LRP

- Quantum Competition speed control—LRP8083; \$170

Trinity

- D6 12 Flatwire double—TRI10018; \$55
- GP 3300 matched 6-cell pack—TRI120024; \$67

BODY, WHEELS AND TIRES

Imex

- Truck pull tires—7595; \$30

Pro-Line

- Ford F-350—3096-01; \$32

BRING ON THE CHROME

In the beginning, I had planned to paint the chassis black, but that just wasn't going to cut it on this truck; I really wanted the chassis to stand out. Steve Pond and I were talking about the chassis one day, and he suggested that I look into having it chromed. I knew there was a reason for keeping him around! After some research, I contacted the guys at Greenwich Metal Finishing; they have facilities in Greenwich and Stamford, CT. They said that they could easily chrome-plate my chassis. I saved money by prepping the chassis myself; I cleaned all the solder joints and polished the brass. After a couple of days, I had the masterpiece you see here back in my hands. Great job, guys!

Below left: New Era's Jug bumpers and a modified Jug bash plate fit my narrow setup. **Below center:** rear toe is fully adjustable. Two Lunsford titanium turnbuckles and DuBro ball ends hold the settings. **Below right:** the shocks are Kyosho units. I stripped off the anodizing and polished them to match the chassis and rest of the parts that I machined.





PERFORMANCE

Well, the race was on, and I had very little time to run the truck, so I was very curious to see how it would do and whether the tranny would hold up. The course was very simple: slick concrete oval with jumps on the left and right sides. At the WRAM show, just like full-size monster truck racing, two trucks run at a time in a ladder-type elimination. I got nervous as I watched the guys practice; they clearly spent much more time running and tuning their trucks. I only had a few laps around my basement. My confidence grew after I defeated my opponent in the first

race. The truck accelerated very well and with very little wheel spin. It tracked straight with every stab of the throttle, thanks to my transmission design. It jumped with a slightly nose-up attitude, and the rear shocks absorbed the impact perfectly. There wasn't any sign of body roll in the corners, the chassis stayed flat every time I turned the wheel. Steering was responsive—almost too responsive, as I cut the corner too tightly a few times. After the dust settled and the racing was over, I went home with a second place finish to local racer Artie Fie, who wins all the time. I was in first place going into the last round of racing, but that all went away when I screwed up and jumped the gun on the first race of the round. Not a bad showing for my first time out with a truck that I designed and built! ■

TSAIS Custom Exhaust Systems

CHROME SIDE PIPE-PRO
TS10BC BLACK CHROME
TS10C CHROME



CHROME SIDE PIPE-BADBOY
TS12BC BLACK CHROME
TS12C CHROME



CHROME SIDE PIPE-MAXIMA
TS13BC BLACK CHROME
TS13C CHROME



The chrome side pipes not only look better, but the finish is more durable. It's a deeper, richer shine that holds up much better. All three models will increase overall performance and sound quieter compare to stock pipes. They will fit the Savage, T-Maxx 2.5, MGT, and most R/C vehicles without modifications. Left exhaust side pipes also available for cars/trucks with left mount exhaust systems. For complete product listing, visit TSAIS.com or RCHub.com.

T-Bonz CV Drive Shafts™



T-Bonz CV driveshafts are precision-machined of alloy steel, hardened for strength, and finished with a black oxide rust-preventive coating. They have near zero backlash and provide smooth, strong acceleration throughout the full range of suspension movement. These driveshafts are built to last, using rubber dust-proof boots to minimize the wear and tear caused by the dirt and debris that's allowed to get into other CV shafts.

TBREVO01 CV drive shafts (4) with outdrive cups for the REVO

TBREVO02 Center CV drive shafts (2) for the REVO

TBTM01 CV drive shafts for E-Maxx and T-Maxx 2.5

TBTM02 Center CV drive shafts for T-Maxx 2.5

TBSA01 CV drive shafts (4) for the Savage

PERFORMANCE PIPES

E0813C for the Savage w/.21-.25 engine

E0816 for the Savage w/.25-.28 engine

E0819CP Tuned Pipe for the Team Losi LST

TSREVO02C Chrome Performance Pipe for Revo



tsais™



Custom Dual Exhaust Systems for the Traxxas Revo, T-Maxx 2.5 and HPI Savage

Features: 3 chamber Tested & Tuned performance pipe; 2 functional exhaust tips with distinct sound; Full scale racing pipe look; Manifold and mounting accessories included: No modifications needed.

MSRP: \$79.99

TSREVO01C



TSTMX01C

TSREVO01C Chrome Dual Exhaust for Revo

TSREVO01BC Black Chrome Dual Exhaust for Revo

TSTMX01C Chrome Dual Exhaust for T-Maxx 2.5

TSTMX01BC BlackChrome Dual Exhaust for T-Maxx 2.5

TSREVO01C Chrome Dual Exhaust for the HPI Savage

TSREVO01BC Black Chrome Dual Exhaust for the HPI Savage

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NOVAK

Super Sport Plus programmable brushless/brush speed control

Brushless motor systems offer many benefits, but a low price isn't one of them. Wouldn't it be nice if you didn't have to commit to brushless all at once and could instead use one speed control for your existing stable of brushed motors as well as brushless powerplants? Novak's Super Sport Plus system lets you do just that. It's ready to rev up Novak's SS5800 and SS4300 brushless motors with superior sensed technology, but it can also handle brushed mod motors down to 12 turns, and it does so with raceworthy specs. I tested it in both modes; here's how it went.



FEATURES

ONE-TOUCH SETUP

As with all Novak speed controls, all you need to do to set up the Super Sport Plus is push a single button. Red, blue, green and amber LEDs keep you informed of the program status and settings.

RADIO PRIORITY CIRCUITRY

As the battery dumps, the Radio Priority system makes certain that the receiver and steering servo have all the power they need, even when the motor is trying to draw off every last amp.

LOCKED ROTOR DETECTION

Because the Super Sport system is sensor-based, it can "tell" when a brushless motor is stalled, and it cuts the power to prevent it from being damaged.

THERMAL-OVERLOAD PROTECTION

The Super Sport controller and Novak's brushless motors are equipped with temperature sensors. If either becomes dangerously hot, the system will shut down until it has cooled enough to operate safely.

DIRECT-SOLDER TABS

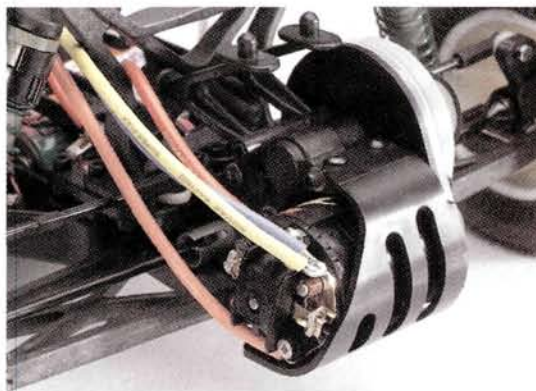
External solder tabs make it easy to replace the power wires. Go ahead and cut them as short as you like for a custom installation; you can easily replace the wires later.

REMOVABLE INPUT HARNESS

This is another convenience biggie. It's easier to bundle the harness, since it can be completely removed from the speed control, and you can install longer or shorter harnesses to suit your needs. Novak supplies a 9-inch, and a 4½-inch harness is also available.

TESTING

Since some wiring modification is needed to hook the Plus up to a brushed motor, I first tested the Super Sport in brushless mode with a Novak SS4300 in an Associated T4. I used the gearing suggested in the speed control's manual, and off I went. As expected, the Plus had the same supersmooth feel as Novak's dedicated brushless controller, but the addition of drag



Here's the brushed-motor hookup. Fitting the three "negative" wires on one lug was tricky, so I soldered one onto the lower lug instead.

brake gave the system that familiar brushed-motor braking effect at neutral. If you've tried a Novak brushless setup before and found yourself overshooting corners when the motor coasted more freely than you expected, you'll definitely appreciate the Plus's drag-brake adjustment.

Next, I installed a Team Orion 12-turn for brushed-motor testing and triple-checked to make sure that I had properly switched the Plus to brushed mode via the One-Touch button. The Super Sport Plus is installed a little differently from a dedicated brushed-motor speed control. Instead of one positive and one negative motor

MANUFACTURER'S SPECS

Input voltage 4 to 7 cells (1.2V/cell)

Dimensions 1.32x1.75x1.05 in.
(33.5x44.5x26.7mm)

Weight 1.7 oz. (48.2g)

BEC 6V/3A

Power wires 14-gauge Super
Flex silicone

Discrete steps 1024 (512 forward,
512 brake/reverse)

Motor limit Brushless: 225 Watts
(Compatible with Novak SS5800 &
SS4300 motors); Brushed: 12-turn

On-resistance Brushless: 0.0019 ohm
(per each phase 3); Brushed: 0.0006
ohm

Rated current Brushless: 160 amps
(forward/reverse), 160 amps (brake);
Brushed: 480 amps (forward), 480
amps (brake)

PRODUCTWATCH

lead, the Plus has one positive lead and three "negative" leads. The blue, yellow and orange motor-phase wires that are attached to separate motor lugs on the SS5800 and SS4300 brushless motors are all attached to the negative lug when used with brushed motors (and yes, squeezing them all on there is a little tricky). I completed the installation by snipping off the Tamiya connector and hard-wiring the negative battery lead and positive motor/battery lead. In brushed mode, the Plus felt as smooth and punchy as any brushed-motor racing speed control, and it operated more coolly than it did in brushless mode (which makes sense, since its on-resistance is cut in half in brushed mode).

THE VERDICT

Unless you plan to race with mods hotter than 12 turns or the Plus's large footprint causes a fit issue in your car, there's no downside to running the Super Sport Plus as your primary racing speed control. You won't miss anything on the track, and when you're ready to go brushless, you'll be ready to go brushless!

FULL PROGRAMMABILITY

Novak is the first company to offer user-programmability in a brushless speed control, and the Super Sport Plus is even more programmable than the standard Super Sport model. The Plus has six, factory-set throttle profiles: five for brushless motors and one for brushed motors. With the exception of the marine program, all can be customized by altering minimum brake, drag brake, deadband and minimum drive. The Super Sport Plus is Novak's first brushless-motor speed control to incorporate a drag brake. If brushed-motor feel is important to you when you run a brushless motor, drag brake is a must-have.

SUPER SPORT PLUS THROTTLE PROFILES

	Brushless Unlimited		Brushless Sportsman		Brushless Marine	Brushed Unlimited
Profile	1	2	3	4	5	6
Rpm	Unlimited	Unlimited	24000	24000	Unlimited	Unlimited
Acceleration	Unlimited	Unlimited	Limited	Limited	Unlimited	Unlimited
Programmable	Yes	Yes	Yes	Yes	No	Yes
Reverse enabled	Yes	No	Yes	No	Yes	No
Reverse %	100	—	100	—	25	—

ADJUSTABLE THROTTLE PARAMETERS

Minimum drive	2, 3, 5, 8, 12% of total drive
Minimum brake	20-65% of total braking force (set in 5% increments)
Drag brake	Off or 25-65% of total braking force (set in 5% increments)
Deadband	2-6% of total throw (set in 1% increments)

FIND IT

Go to page 234 for manufacturers' contact information

If you're ready to jump straight into brushless power, why make your brushed motor collection obsolete? With the Super Sport Plus, you'll always have the option of dropping in one of your favorite mods. — Peter Vieira ■

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0 to 60 in Under 3 Seconds!

SPECIFICATIONS

Length: 30"	Front Track: 7.1"
Width: 7.75"	Rear Track: 7.75"
Height: 5"	Ground Clearance: 0.35"
Wheelbase: 24.5"	Weight: 53 oz.

INCLUDED:

- ✓ Dark Thunder™ Top Fuel Dragster
- ✓ Installed digital 2 channel radio (over 2600-ft. range)
- ✓ Installed Q1.6 engine
- ✓ Painted body with front and rear spoilers



2 Channel Pistol Radio Included and Installed

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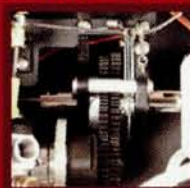
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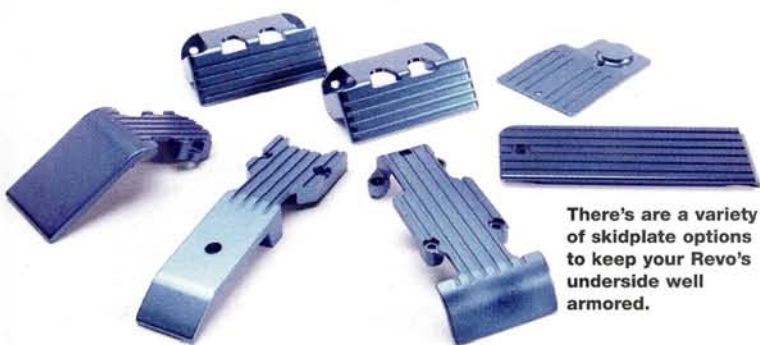
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TRINITY Revo Aluminum Components

As far as aftermarket support goes, the Traxxas Revo is picking up right where the T-Maxx left off. More and more companies, including Trinity, are offering trick hop-ups for the popular monster. The company has a whole slew of items that range from suspension arms to skidplates to skull bumpers and servo protectors. All the aluminum parts are crafted out of heavy-duty 6061 aluminum alloy and anodized bright blue.



There's a variety of skidplate options to keep your Revo's underside well armored.

SKIDPLATES

Trinity also offers a wide variety of skids for the Revo: you can get a two-piece front skidplate set; a rear skid; servo protector plates (two pieces); a receiver pack cover plate; and a fuel tank skidplate. Each skid is made of extra-thick material so it's able to withstand some serious punishment, and they're direct bolt-ons.

SUSPENSION ARMS

The heavy-duty Trinity arms slide into place without a hitch. They feature three suspension-adjustment holes front and rear. When threading the stock Traxxas pushrods into place, I recommend that you use a dab of thread-lock to keep the screws secure, since the arms aren't self-tapping.

BODY-POSTS AND MOUNTS • SKULL BUMPERS

The aluminum front body-post mount is also a sharp-looking piece of billet aluminum. It has very clean lines and even has a small skull and crossbones etched into its front.

This very heavy-duty piece should hold up to the most brutal punishment over time, too. The fully adjustable aluminum body posts will allow most low-profile aftermarket bodies to fit. The front posts are separate pieces, whereas the



PARTS LIST

- Skull bumper set (F/R)—TRI35015/TRI35016; \$30
- Body-post mounts (F/R)—TRI35017/TRI35018; \$40
- Body posts (F/R)—TRI35019/TRI35020; \$27
- Servo-protector plates (2)—TRI35021; \$33
- Receiver-pack-cover bottom plate—TRI35022; \$16
- Fuel tank bottom plate—TRI35023; \$16
- Drive hexes (4)—TRI35024; \$34
- Wheel nuts (4)—TRI35025; \$6
- 2-piece engine head—TRI35026; \$50
- Shock mounts (F/R)—TRI35027/TRI35028; \$23
- Heat-treated colored spring set (5 pairs)—TRI35029; \$23
- Extra-firm colored spring set—TRI35030; \$25
- Upper wishbones (F/R)—TRI35031/TRI35033; \$65
- Lower wishbones (F/R)—TRI35032/TRI35034; \$70
- Front 2-piece skidplate set—TRI35035; \$50
- Rear 1-piece skidplate—TRI35036; \$30
- Lightweight engine flywheel—TRI35037; \$27
- Optional turbo button for engine head—TRI35038; \$16
- Bumper mount & handle (F/R)—TRI35039/TRI35040; \$30
- Wheel locknuts—TRI35000; \$5
- Lugnut covers—TRI35001; \$14
- Threaded shock collars (4)—TRI35005; \$8
- Replacement O-rings for shock collars—TRI35006; \$1
- Trinity Hi-flo in-line pipe w/manifold—TRI35007; \$70

rear posts feature a solid bracket that runs between them to accommodate the EZ-Start hookup.

SPRING KIT

Trinity offers two spring kits: a standard and an extra-firm version. Both of these beefy springs kits come in a 5-pack, so you can easily tune your shocks to a variety of track conditions.

PRODUCTWATCH

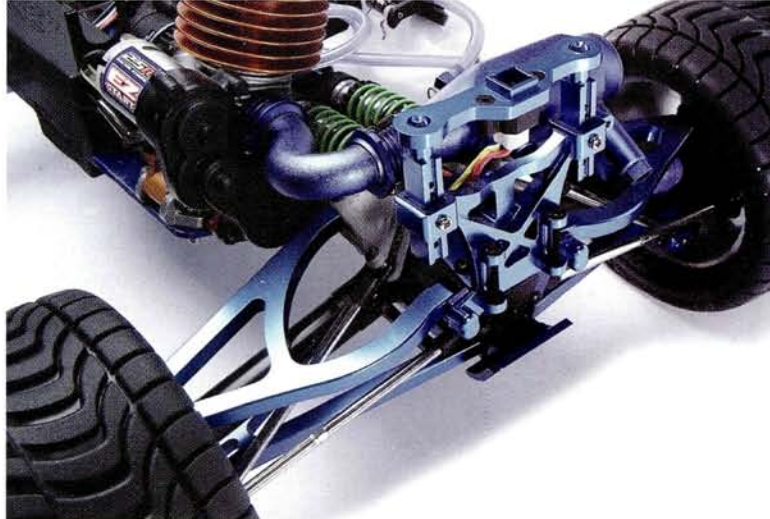


"Let's put a skull on the bumper." "Yeah, and the bumper can be shaped like a bone!" A product is born.

The springs range from soft to superstiff, and they fit the stock shock bodies perfectly.

AFTER THE INSTALL

With all the aluminum bolted on, the Revo porks up by about 2 pounds (our built-up sample truck also had a Sirio .23 installed, so we don't have a to-the-gram weight). But unless you're building a Revo show truck, you probably aren't going to bolt on every available component (and if you are building a show truck, do you care about weight?). In smaller doses, the aluminum upgrades add a much less significant weight while they increase ultimate strength. There are certainly plenty of parts to choose from, but I particularly like the beefed-up protection that the skidplates provide. I also liked the fuel tank and servo skids; you can never have enough protection! I'm also a fan of the skull bumpers; they



seem like pure style pieces, but they also give you something substantial to grab when you pick the truck up off the track.

— John Howell ■

FIND IT

Go to page 234 for manufacturers' contact information



The body-post mounts show off Trinity's intricate machine work.

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Art's Hobby (734) 455-1927; artshobby.com.

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duratrax.com.

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Great Planes Model Distributors
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greatplanes.com.

Greenwich Metal Finishing (203) 629-8479.

Hill Top R/C and Hobby (603) 239-6111;
hilltoprc.com.

Hitec RCD Inc. (858) 748-6948;
hitecrd.com.

Horizon Hobby (217) 355-9511;
horizonhobby.com.

Hurricane Nitro (480) 967-5053;
hurricannitro.com.

Imex Model Co. (352) 754-8522; imexrc.com.

J Concepts (352) 243-5904 [fax only];
jconcepts.net.

JR Racing distributed by Horizon Hobby.

K&S Engineering (773) 586-8503;
ksmetals.com.

KO Propo USA Inc. (310) 532-9355;
kopropo.com.

Kyosho Corp. of America (800) 716-4518;
kyoshoamerica.com.

LRP distributed by Team Associated.

Novak Electronics Inc. (949) 833-8873;
teamnovak.com.

OFNA Racing (949) 586-2910; ofna.com.

Peak Performance (714) 692-8533;
peakmotors.com.

Pro-Line (951) 849-9781; pro-lineracing.com.

Protoform Inc. distributed by Pro-Line.

Robitronic Robitronic.com.

Spektrum distributed by Horizon Hobby.

Tamiya America Inc. (800) 826-4922;
tamiyausa.com.

Team Associated (714) 850-9342;
teamassociated.com; rc10.com.

Team Checkpoint distributed by O'Donnell
Racing (562) 944-9621.

Team Losi distributed by Horizon Hobby.

Team Orion Inc. (714) 694-2812;
team-orion.com.

Thunder Tech Racing (815) 467-0621;
thundertechracing.com.

Traxxas Corp. (972) 265-8000; traxxas.com.

Trinity Product Inc. (732) 635-1600;
teamtrinity.com.

XRAY distributed exclusively by RC America;
(214) 744-2400; rcamerica.com.

Zegers R/C Graffixx (561) 988-5411;
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Hobby Raceway, Tusculosa, Alabama 35405; Tony Brothers, 205-339-4950; email: gotjuice@comcast.net



Mobile Miniature Speedway, Theodore, Alabama 36582; Richard Sweetser, 251-653-6643; email: jbogard@comcast.net; web: mywebpages.comcast.net/jbogard



North Cullman Raceway, Cullman, Alabama 35055; Daniel Lollis, 256-775-2491; email: cullmanrchoobbies@yahoo.com; web: www.cullmanrchoobbies.homestead.com



Oak Mountain Hobbies, Pelham, Alabama 35124; Jay Simpson or Charles Rosato, (205) 685-8980; email: jsimp@oakmntnhobbies.com; web: www.oakmntnhobbies.com



ARIZONA

HobbyTown Raceway--Tucson AZ, Tucson, Arizona 85713; Jay, (520) 882-8888; web: www.hobbytown.com



HobbyTown U.S.A.--Phoenix AZ, Phoenix, Arizona 85044; Doug McFarland, (480) 598-5282



R/C Sports Mania Raceway, Phoenix, Arizona 85017; Mike Lubanovich, (602) 278-3671; email: info@rcsportsmania.com; web: www.rcsportsmania.com

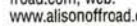


Scottsdale R/C Raceway, Scottsdale, Arizona 85251; Scott Anfinson, 480-945-2186

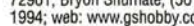


ARKANSAS

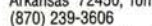
Alison OffRoad RC Raceway, Little Rock, Arkansas 72206; Steve Alison, (501) 490-1227; email: otto@alisonoffroad.com; web: www.alisonoffroad.com



GS Hobby, Ft. Smith, Arkansas 72901; Bryon Shumate, (501) 648-1994; web: www.gshobby.com

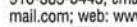


Sparks R.C. Raceway, Paragould, Arkansas 72450; Tommy Sparks, (870) 239-3606

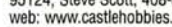


CALIFORNIA

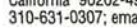
Capital City R/C, Sacramento, California 95829; James Patterson, 916-383-3445; email: capitalrc@hotmail.com; web: www.capitalrc.com



Castle Hobbies, San Jose, California 95124; Steve Scott, 408-377-3771; web: www.castlehobbies.com



Crystal Park Raceway, Compton, California 90202-4925; James Reese, 310-631-0307; email: mailto:info@crystalparkraceway.com



Delta R/C Raceway & Hobbyshop,

Antioch, California 94509; Don or Kraig, (925) 778-2965; email: deltarc@comcast.net; web: www.deltarc.com



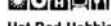
Extreme RPM Hobbies, Grand Terrace, California 92313; Bobby Haney, 909-370-3379; email: Extremrpmracing@aol.com; web: www.ExtremeRpmRacing.com



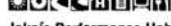
Hobby Central Raceway, Poway, California 92064; Lee, (858) 513-0373; web: www.hobby101.com



Hobby World, San Jose, California 95129; Guy Bassett, (408) 873-2109



Hot Rod Hobbies, Saugus, California 91350; Jimmy Babcock, (661) 255-2404



Jake's Performance Hobbies, Rohnert Park, California 94928; Jake, (707) 586-3375; email: jphracing001@aol.com; web: jphracing.com



Palm Desert OffRoad R/C Raceway, Palm Desert, California 92260; Bob Barrett, 760-341-5699; email: htpalmdesert@msn.com; web: www.hobbytown.com



Paradise Hobbies & RC Raceway, Paradise, California 95969; David Lafabreque, (530) 877-6447; email: paradisehobbies@aol.com; web: www.paradisehobbies.com



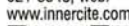
Pure Adrenaline RC & Hobby, Sonoma, California 95370; Matt, (209) 536-6232; email: contact@pahobby.com; web: www.pahobby.com



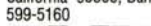
Racer's Haven Raceway, Bakersfield, California 93309; Greg Cooper, 661-835-0441; web: www.racers-haven.com



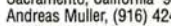
Rescue Mini R/C Speedway, Rescue, California 95672; Bruce Pease, (530) 621-3948; web: www.innercite.com/~rracing/



Ripon R/C Speedway, Ripon, California 95366; Dan Tanis, (209) 599-5160



Sacramento RC Racing & Hobbies, Sacramento, California 95824; Andreas Muller, (916) 424-4001; email: andreas123@earthlink.net; web: www.77sunset.com



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SpeedWorld Raceway, Roseville, California 95678; Billy Bowerman, 916-783-8864; email: speeddog@mindsync.com; web: speedworldraceway.com



The Dirt Valley R/C Racepark, Hemet, California 92544; Joe Christenson, (909) 925-7592



Ventura RoadRunners, Camarillo, California 93010, 805-564-4144; email: dudebigal@aol.com; web: www.venturaroadrunners.com



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Valley West Off-Road RC Club, Grand Junction, Colorado 81504; Jodie Grein, 970-242-1412; email: geerhed@gj.net; web: www.gj.net/~geerhed/vworcind.html



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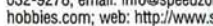
K&N R/C Speedway Inc., Stafford Springs, Connecticut 06076; Jim or Bill, (860) 684-9896



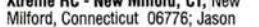
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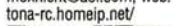


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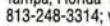
B&T RC Central, Fort Walton Beach, Florida 32547; Tim, 850-863-1666



Daytona/Strickland RC Park, Holly Hill, Florida 32174; Mike Wichman, 386-677-0898; email: moxnicht@aol.com; web: <http://daytona-rc.homelink.net/>



Farmers Hobby Shop & Raceway, Tampa, Florida 33619; Greg Cardone, 813-248-3314; web: www.farmershobby.com



First Coast Speedway, Jacksonville, Florida 32211; Bobby Phillips, 904-716-0861; web: www.firstcoastau-toracing.com



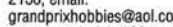
G&C Hobby Raceway, Lantana, Florida 33462; George, 561-547-3812; email: gncobbies2@cs.com; web: www.gncobbies.com



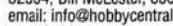
GB's Hobbies, Port St. Lucie, Florida 34952; Track Owner, 561-460-2844; email: qaircft@bellsouth.net



Grand Prix RC-Club, Ft. Pierce, Florida 34945; Luther Peterson, 772-473-2130; email: grandprixhobbies@aol.com; web: www.grandprixhobbies.com



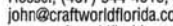
Hobby Central, Pensacola, Florida 32504; Bill McLester, 850-471-9800; email: info@hobbycentralrc.com; web: www.hobbycentralrc.com



Hobby World Raceway, Jacksonville, Florida 32210; Greg, (904) 772-9022



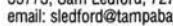
Kissimmee R/C Auto Racing, Kissimmee, Florida 34741; John Rosser, (407) 944-4913; email: john@craftworldflorida.com; web: www.craftworldflorida.com



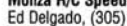
Miami RC Raceway, Miami, Florida 33176; Mickey Cerra, (305) 630-3714; email: miamircraceway@aol.com



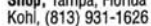
Minnreg R/C Club, Largo, Florida 33773; Sam Ledford, 727-403-7110; email: sledford@tampabay.rr.com; web: www.minnregcc.com



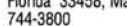
Monza R/C Speedway, Miami, Florida; Ed Delgado, (305) 437-9895



Morris Kohls Raceway and Hobby Shop, Tampa, Florida 33604; Morris Kohl, (813) 931-1626



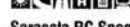
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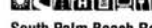
NORRA, Naples, Florida 34116; Mike Brigham, (239)-398-4332; email: NORRA_RC@yahoo.com; web: www.geocities.com/norra_rc



Pro Hobbies Speedway, Apopka, Florida 32712; Jim, (407) 886-4615; email: prohobby@juno.com



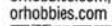
Sarasota RC Speedway, University Park, Florida 34201; Jim Wilson, (941) 358-7047



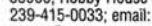
South Palm Beach Racers, Boca Raton, Florida 33486; Mike Fazio, 561-338-5367; email: epine01@bellsouth.net; web: <http://communitylink.gopbi.com/group/s/pbrclub>



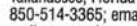
Superior Hobbie R/C Parking Lot Racing, Casselberry, Florida 32707; (407) 834-9299; email: racing@superiorhobbies.com; web: www.superiorhobbies.com



SWF RC Car Club, Fort Myers, Florida 33908; Hobby House of Ft. Myers, 239-415-0033; email: hobbyhouseofft-myers@msn.com



Tallahassee R/C Speedway, Tallahassee, Florida 32301; Tim Cook, 850-514-3365; email: idothtre@hotmail.com; web: www.tallahasseeirc.com



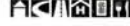
Tampa R/C Raceway, Seffner, Florida 33584; Carole Raimondi, 813-655-6366; email: carolehobbytown@aol.com



Treasure Coast R/C Club, Palm Bay, Florida 34990; Doug Goethel, 772-283-2260; email: 1rings@adelphia.net



West Coast R/C Club, Lutz, Florida 33549; Jim Larrimore, 813-368-4962



GEORGIA

Anthony's Victory Lane, Savannah-Pooler, Georgia 31322; Anna Balph, 912-748-0847; email: AnVictLane@aol.com; web: anthonyvictorylane.com



KEY TO SYMBOLS

	Indoor		Concrete
	Outdoor		Asphalt
	Off-road		Minis & Micros
	On-road		On-site hobby shop
	Oval		AC power
	Dirt oval		Auto lap counting
	Carpet		Food available

Augusta R/C Racer's Club, Augusta, Georgia 30909; Darren, 706-860-5608; web: Augusta.rc.freehomepage.com

Dalton Motorsports, Dalton, Georgia 30721; Keith Manton, 706-226-6699; email: dmsa@alotco.net

Echeconne Superspeedway, Macon, Georgia 31216; Clifford Kline, 478-256-2032; email: gtack1000@aol.com

Hobby Town Raceway, Columbus, Georgia 31909; Frank Bastos, (706) 660-1793; email: fbastos@mind-spring.com; web: www.hobbytown.com

Phil Hurd Raceway (S.C.O.R.E.), Savannah, Georgia 31406; Dana Franklin, Club President, 912-308-8545; email: bonescom@bellsouth.net; web: www.score-racing.org

Primetime Raceway, Calhoun, Georgia 30701; Tommy Jackson, 706-255-9037; email: primetimehobby@gccinternet.net; web: primetimehobby@gccinternet.net

The Flight Box Hobby Shop, Rome, Georgia 30161-6826; Leslie Duke, (706)-234-3014

HAWAII

A.S.I. Racing, Kapaa Kauai, Hawaii 96746; Arnold Morales, 808-821-8132

Radio Control Assoc./Alaa Park Raceway, Pearl City, Hawaii 96782; Ace R/C Products, (808) 456-1279

Sandy Flemings, Pearl City, Hawaii 96782; Dave Caldwell, 808-456-7272; email: info@formula1-rc.com; web: www.formula1-rc.com

IDAHO

Almosta Ranch RCs, Twin Falls, Idaho 83301; Casey Clements, (208) 733-8667; email: clements2@msn.com

Capital Dirt Burners, Boise, Idaho 83702; Jeff Mills, 208-376-8932; email: jeffmills928@msn.com; web: www.capitaldirtburners.com

DM Raceway, Pocatello, Idaho 83201; Mike Buffalo, 208-233-8163; email: mike@dmraceway.com; web: www.dmraceway.com

ILLINOIS

AJs Raceway & Hobby, Dekalb, Illinois 60115; AJ, 815-756-2772; web: www.ajsraceway.com

C&R Hobbies, Milford, Illinois 60953; Ray Craighead, 815-889-4073; email: thomas@millnet.net

C.I.R.C.A., Jacksonville, Illinois 62650; Randy Tendick - Sport-N-Hobby, (217) 245-1375; web: <http://www.geocities.com/jaxcirca/>

His N Hers Hobbies Raceway, Normal, Illinois 61761; Kevin Turek, 309-862-3080; email: hishershobbies@aol.com; web: www.hishershobbies.com

HobbyTown USA - Oak Park, IL, Oak Park, Illinois 60301; Mark or Fred, (708) 445-8056; email: htuop1@aol.com

HobbyTown USA - Oak Park, IL, Oak Park, Illinois 60301; Mark or Fred, (708) 445-8056; email: htuop1@aol.com

HobbyTown USA - Oak Park, IL, Oak Park, Illinois 60301; Mark or Fred, (708) 445-8056; email: htuop1@aol.com

Machesney Park Raceway, Machesney Park, Illinois 61115; Gina, (815) 282-1311; email: mpr30@aol.com; web: www.mpr30.homestead.com

Monee R/C Raceway, Monee, Illinois 60449; Roy or Roberta Moody, (708) 534-2422

Venture Raceways, Libertyville, Illinois 60048, (847) 549-6963

INDIANA

Bremen Racing Ent., Bremen, Indiana 46506; Dale Heuberger, 219-546-3807

Duneland Hobbies & Raceway, Portage, Indiana 46368; Ron, 219-763-1610; email: RTrobaugh1@email.msn.com; web: www.dunelandhobbies.com

Hobby Barn Raceway, Terre Haute, Indiana 47802-9694, (812) 299-5773

Madison Funwheelers Carpet Oval, Madison, Indiana 47250; Charlie Hatchel, 1-812-866-8930

Pete Russell's R/C Speedway, Elkhart, Indiana 46516; Pete Russell, 574-293-1827

R/C World of Indiana, Lynn, Indiana 47355; Joe Kolp, (765) 874-2464; email: rcworld@rcworld.com; web: www.rcworld.com

RC Barn, Monroe, Indiana 46772; Mark Lengerich, (219) 692-6600; email: bigdaddy@adamswells.com; web: www.rcbarn.com

RCRCR Raceway, Booneville, Indiana 47601; Scott Payton, 812-573-6087; email: email@rcrcr.com; web: www.rcrcr.com

Schoolyard RC Speedway, Lagrange, Indiana 46761; David W. Bryan, 260-463-3598; email: dwbryan@loc1.net; web: www.rcspeedway.net

Showtime Lot Racing, Fort Wayne, Indiana 46819; Mike Romines, (219) 478-6099; web: fortwaynecarpark.tripod.com/

Ames Radio Control Speed Assoc., Ames, Iowa 50014; Ryan Davis/Brad Scandrett, 515-231-3813/515-432; email: Davismotorsp@aol.com

Dubuque R/C Speedway, Dubuque, Iowa 52002; Dave Kleinschmidt, 563-556-8524; email: rcraig7@aol.com; web: www.geocities.com/dbqrc

Hobby Haven, Urbandale, Iowa 50322; Rick Marble, (515) 276-8785; web: www.hobbyhaven.com

Independence, Independence, Iowa 50644; Eugene Bachman, 319-266-3857; email: BachmanE2@hotmail.com

Iowa City R/C Racing Association, Iowa City, Iowa 52240; Hobby Corner, (319) 338-1788

IROAR-Vinton Raceway @ Vinton Roller Rink, Cedar Rapids, Iowa 52402; Ed Karr, 319-362-1291; email: boxkarhobby@aol.com

Manly R/C Club, Manly, Iowa 50456; Bruce Hill, (641) 454-2025

Marble's Raceway, Des Moines, Iowa 50317; Rick Marble, (515) 262-7507

Radio Control Raceway Park, Fort Dodge, Iowa 50501; Bernie Halverson, (515) 576-3780; email: bernieh@frontiernet.net

RiverFront Speedway, Fort Dodge, Iowa 50501; Bernie Halverson, 515-576-3780 (515-57); email: bhalverson@dodgenet.com

Wild Bill's Raceway, Knoxville, Iowa 50138; William Anderson, Jr., 641-842-5973; email: wildbilz@iowatelecom.net; web: www.wildbillsracing.com

KANSAS

D&B Raceway, Menlo, Kansas; Ron Ball, (785) 855-2370

KENTUCKY

Coyote Raceway, Lexington, Kentucky 40505; Steve M., 859-253-9330; email: coyoterace1@hotmail.com; web: www.coyoteraceway.com

Dixon's R/C RaceWay, Hazard, Kentucky 41701; Jeff Dixon, (606) 436-4820; email: jeffdr1@hotmail.com

Mayking R/C Speedway, Mayking, Kentucky 41837; Jon Fields, 606-633-4700; email: jon1@se-tel.com

Pit Stop Hobbies, Paducah, Kentucky 42003; Robert or Rodney, 270-443-0052; email: pitsstop1@apex.net

R.C.WOW, Falmouth, Kentucky 41040; John P. Jones, (859) 654-1700; email: rcwow@fuse.net; web: www.rcwow.com

Trio Hobbies & R/C, Radcliff, Kentucky 40160; Maurice Johnson, (502) 351-7547

Wildcat Speedway, Nicholasville, Kentucky; David Bowles, 859-272-0231

LOUISIANA

Fast Pace Hobbies, Alexandria, Louisiana 71301; Joseph or Casey Toralba, 318-561-2070; email: fast-pacehobbies@aol.com

Gator R/C Raceway, Moss Bluff, Louisiana 70612; Tony Diaz, 337-855-3206; email: keithsjac@aol.com; web: homepage.mac.com/kmaples/

Hwy. 44 Hobby Shop, Gonzales, Louisiana 70737; Eric Olmstead, (225) 644-1773; email: eric209@aol.com

Red Stick R/C Raceway, Baton Rouge, Louisiana 70814; Michael Pino, 225-218-1002; email: redstickraceway@aol.com; web: www.redstickraceway.com

St. Charles RC Speedway, Destrehan, Louisiana 70047; Al Cazalot, (504) 764-0625; email: stcharlesracer@home.com; web: members.home.net/stcharlesracer

MAINE

Central Maine R/C Speedway & Hobbies, Fairfield, Maine 04963; David Prescott, (207) 453-4588; email: rcracer@mint.net

Clay Bowl R/C Hobbies, Greene, Maine 04236; Pat Cap, (207) 946-5003

MARYLAND

Coles Race Way, Waldorf, Maryland 20602; Cole Brincefield, (301)-843-1386; email: kbrincefield@cs.com

GPA Hobbies, Crofton, Maryland 21114, 301-858-0004

HobbyTown USA--Glen Burnie MD, Glen Burnie, Maryland 21061; David Parkison, 410-590-4950; email: racing@mdhobbytown.com; web: mdhobbytown.com

The Track, Gaithersburg, Maryland 20877; Mimi Wong, (301) 417-9630; email: mimithetrack@yahoo.com; web: www.rctrack.com

Trifecta Hobbies, Prince Frederick, Maryland 20678; George or Mike, 410-414-9000; email: gmitchell@trifectahobbies.com

GPA Hobbies, Crofton, Maryland 21114, 301-858-0004

HobbyTown USA--Glen Burnie MD, Glen Burnie, Maryland 21061; David Parkison, 410-590-4950; email: racing@mdhobbytown.com; web: mdhobbytown.com

The Track, Gaithersburg, Maryland 20877; Mimi Wong, (301) 417-9630; email: mimithetrack@yahoo.com; web: www.rctrack.com

Trifecta Hobbies, Prince Frederick, Maryland 20678; George or Mike, 410-414-9000; email: gmitchell@trifectahobbies.com

Big Boys Toys, Fall River, Massachusetts 02723; Track Owner, 508-677-9400

East Templeton Model Raceway, Templeton, Massachusetts 01468; Keith Anderson, 1-978-632-1619; email: keith@glowplug.com; web: glowplug.com

Hi-Tech Hobbies, Raynham, Massachusetts; Ruben, (508) 880-5373

Megadrome Raceway, North Adams, Massachusetts 01247; Bob Blanchette, 413-743-7223

Northboro Speedway, Northboro, Massachusetts 01532; Bob Trimble, 508-393-8087

R/C Excitement, Inc., Worcester, Massachusetts 01606; Todd Anderson, 508-853-3272; email: rcexcitement@aol.com; web: www.rcexcitement.com

RPM RC Raceway, Abington, Massachusetts 02351; Richard Tonetti, 781-857-1177; email: rpmrc@yahoo.com; web: www.rpmrc.com

D.R. R/C, Taylor, Michigan 48180; Bobby or Fred, (734) 287-7405; web: www.downriversracing.com

Dirt Burner Racing, Commerce, Michigan 48390; Bill, 248-926-1140; web: www.dirtburnerracing.com

E.U.P., Kincheloe, Michigan 49788; Joel Wiggins, 906-495-3503

Great Lakes Racers Club, Grand Rapids, Michigan 49558; John Warner, 616-838-2231; email: GrLsRacers@aol.com; web: www.rogers3.com/girlc/

Hideaway Raceway, Napoleon, Michigan 49201; David Carlisle, 1-517-536-8821; email: adcarlisle1@netscape.net

Jons Hobby, Mt. Pleasant, Michigan 48858; Jon Beutler, 989-773-5412; email: jonshobby@earthlink.net; web: www.jonshobby.com

JT Superspeedway, Battle Creek, Michigan 49015; Jerry or Sam, 616-965-0116

Larry's Performance RC Carpet Track, Sterling Heights, Michigan 48314;

Larry, 586-997-4840; email: cma-herm@hotmail.com; web: larrysperformancers.COM

Lazer RC Speedway, Adrian, Michigan 49221; Russ Johnson, (517) 263-2806

N.M.R.C.C. Speedway, Gaylord, Michigan 49735; Gabe, (989) 732-3963; email: hobby-toy@voyager.net

No Limits RC Raceway-MI, Taylor, Michigan 48180; Paul Yingling, (734) 285-9093; email: fsthobbyshop@yahoo.com; web: fsthobbyshop.com

R&L Hobbies & Racing, Portage, Michigan 49002; Rex Simpson, (616) 323-3686; web: www.rlhobbies.com

R.A.C.E. Inc., Jackson, Michigan 49203; Sam Sprang, (517) 787-9161

Raw Roots Race Tracks, West Olive, Michigan 49460; Roy Bennink, (616)296-0944; email: rawroots@tm.net

Village Hobbies, Hesperia, Michigan 49421; Al Deater, 231-854-6666; email: vhhobbies@hotmail.com; web: vhhobbies@tdats.net

Village R/C Raceway, Decatur, Michigan 49045; Chuck Nolke, (616) 423-7878

MINNESOTA

Country R/C Raceway Park, Belview, Minnesota 56214-8115; Charles L. Steffl, 507-641-8115

Jis Radio Control Race Park, Starbuck, Minnesota 56381; Jay Campbell, (320) 239-4827

Kevin's Off-Road Raceway, Crookston, Minnesota 56716-2317; Kevin Altepeter, 218-281-7491; email: kevin.altepeter@krcrproducts.com; web: www.krcrproducts.com

National Speedway, Fridley, Minnesota 55432; Steve Hedenland, 763-571-9283; email: mrtip@nationalhobby.com; web: www.nationalhobby.com

Northwoods Hobby Raceway, Brainerd, Minnesota 56401; John or Doug, (218) 829-9257

Twin Cities Hobby & Raceway, Brooklyn Park, Minnesota 55428; Mark O'Brien/Ray Cook, (763)315-8700; email: wooduster@msn.com; web: www.twincityhobby.com

MISSISSIPPI

Meridian RC Speedway, Meridian, Mississippi 39302; Joe or Pearce, 601-483-7000

Small Cars Unlimited, Jackson, Mississippi 39212; Ed Hill, 601-372-3278; email: fast@smallcarsunlimited.com; web: www.smallcarsunlimited.com

X-Treme RC, Saucier, Mississippi 39574; Marty Capers, (228) 539-2004

MISSOURI

B&L Hobbies & Raceway, Park Hills, Missouri 63061; Bob Marler, (573) 431-9444; web: www.bandlhobbies.com

Fastlane Raceway & Hobbies, Blue Springs, Missouri 64015; Shane & Randy, (816)220-0100; email: info@fastlanehobby.com; web: info@fastlanehobby.com



Hobbies In Motion Raceway, Springfield, Missouri 65803; Matthew Froneo, 417-886-9621; email: mrvk-turismo@aol.com; web: www.gor-c.com



North Missouri Raceway, Chillicothe, Missouri 64601; Billy Johnston, (660) 646-1120



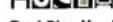
Novelty R/C Raceway & Hobbies, Novelty, Missouri 63460; Rex & Jena Franke, 660-739-4530; email: noveltyrc@noveltyrc.com; web: www.noveltyrc.com



Ozarks R/C Raceway, Springfield, Missouri 65803; Gene Rhodes, 417-873-9350(Track); email: OzarksRaceway@aol.com



RCTRAX Racing Club of Central Missouri, Hallsville, Missouri 65255; Gary Phillippe, 573-442-8183; email: philip74@verizon.net



Real Blue Vue R/C, Kansas City, Missouri 64133; Steve Hale, (816) 358-0238; email: hrealrc@aol.com; web: www.geocities.com/real_rc_raceway



Real R/C Raceway, Pleasant Hill, Missouri 64080; Steve Hale, (816) 540-5584; email: hrealrc@aol.com; web: www.real-rc.com



Showtime Speedway, Bakersfield, Missouri; Don Risner, (601) 203-1481

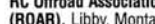


MONTANA

Garden City R/C Speedway, Missoula, Montana 59801; Brian Culp, (406) 549-7992; email: gardencityrc@msn.com



Magic City Racers, Billings, Montana 59102; Bryan Grummett, 406-656-8266; email: jsaves@tgrsolution.net; web: www.magiccityrc.com

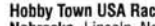


RC Offroad Association of Racing (ROAR), Libby, Montana 59923; Jamie, 406-293-6506; email: shark-boyet@hotmail.com



NEBRASKA

Hadar R/C Raceway, Norfolk, Nebraska 68701; John Schoenauer, (402) 644-7922



Hobby Town USA Raceway Park-Nebraska, Lincoln, Nebraska 68508; Chad, 402-434-5062; email: lincolnrcracing@alltel.net; web: www.lincolnrcracing.com



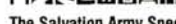
NESCAR Raceway, Grand Island, Nebraska 68801; Steve Blayney, (308) 382-0920; email: blayneyracing@hotmail.com



O.N.R.O.A.D., Omaha, Nebraska 68104; CoRK Jacobs, (402) 556-8674



OTWG Carpet Raceway, Norfolk, Nebraska 68701; John Schoenauer, (402) 644-7922



The Salvation Army Speedway, Omaha, Nebraska 68164, 402-734-3414

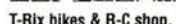


NEVADA

1st Place Raceway, Fallon, Nevada 89406; Stan Lattin, 775-867-3357; email: info@1stplacetrack.com; web: www.1stPlaceRace.com



Las Vegas R/C Raceway, Las Vegas, Nevada 89139; Patrick Quinn, 702-365-1396; email: patrickquinn98@vcom.com; web: www.lasvegascrraceway.com



T-Rix bikes & R-C shop, Elko, Nevada 89801; Gary Perkins, (775) 777-8804; email: mtnman14k@hotmail.com



NEW HAMPSHIRE

Hill Top R/C, Ashuelot, New Hampshire 03441; Pete Bastoni (owner), 603-239-6111; email: hilltoprc@netzero.net; web: www.hilltoprc.com



Lakes Region R/C Speedway, Gilford, New Hampshire 03246; Louie Blais, 603-524-2909; email: racing@lakesregionrc.com; web: www.lakesregionrc.com



RT 106 Racepark, Pembroke, New Hampshire 03275; David Daniels, 603-224-7223; email: david@collectracing.com; web: www.106racepark.com



NEW JERSEY

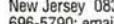
Americais Hobby Center Inc., North Bergen, New Jersey 07047; John Many, (201) 662-0777; web: www.ahc1931.com



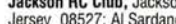
Back Track Raceway, Hammondon, New Jersey 08037; Bob W., 609-214-5016



Checkerboard Raceways, Elwood, New Jersey 08217; Ray Murray, 856-629-9413; email: RaysTrack@webtv.net



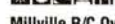
Family Hobbies Raceway, Vineland, New Jersey 08360; Linda Vogel, 856-696-5790; email: familyhobbies@yahoo.com; web: familyhobbiesraceway.com



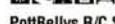
Jackson RC Club, Jackson, New Jersey 08527; Al Sardano, 908-770-7621; email: njeveguy@jacksonrcracing.com; web: www.jacksonrcracing.com



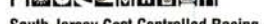
Jefferson Speedway, Oak Ridge, New Jersey 07438; Jim, (973) 697-7525



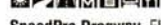
Millville R/C Oval & Roadcourse, Millville, New Jersey 08332; William Denstoz, 856-327-4640



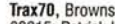
PottBellys R/C Speedway, Pitts Grove, New Jersey 08360; Drew Anastasio, 856-207-2495; email: pottbelly@pottbellysrc.com; web: www.pottbellysrc.com



South Jersey Cost Controlled Racing, Sicklerville, New Jersey 08081; Ray Murray, 856-629-9413; email: RaysTrack@webtv.net; web: www.sjccr.com



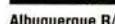
SpeedPro Dragway, Elizabeth, New Jersey 07206; Albie Nizolek, 908-351-5080; email: funnycart76@aol.com; web: www.speedpro.org



Trax70, Browns Mills, New Jersey 08015; Patrick Uket, 201-563-8000; email: patrick@obassey.com; web: www.Trax70.com

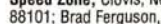


Wacky RC Raceway, Roselle, New Jersey 07203; Tony Williams or Kimble Wright, (908) 241-6700



NEW MEXICO

Albuquerque R/C Off-Road Raceway, Albuquerque, New Mexico 87120; Bill Mitchell, (505) 250-3411(m); email: info@rcDirtTrack.com; web: www.rcDirtTrack.com

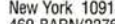


Speed Zone, Clovis, New Mexico 88101; Brad Ferguson, 505-769-1737; email: speedzone@yucca.net



NEW YORK

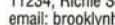
(CR R/C Racers) Capital District Radio Controlled Stock Car Club, Nassau, New York 12123; Kirt Coonrad, 518-766-0029; email: cdrc-scc@hotmail.com; web: http://cdrcracers.50megs.com/



BarnStormers RC Raceways, Chester, New York 10918; Lou Sytsma, 845-469-BARN(2276) o; email: lamsytsma@hotmail.com; web: www.barnstormersrc.com



Brennanis RC Hobbies, Vernon, New York; Bill or Tom Brennan, (315) 829-4930



Brooklyn Hobbies, Brooklyn, New York 11234; Richie Siriano, 718-951-2500; email: brooklynhobbies@aol.com; web: www.brooklynhobbies.com



Bruckner Racing, Bronx, New York 10465; Thomas Baffers Sr., (800)-288-8185



Chipmunk Hill R/C Speedway, Theresa, New York 13691; Ted or Pete House, (315) 628-5065



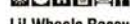
Competition Hobby Supplies & Speedway, Cohoes, New York 12047; Howie Cummings, 518-786-3622; email: howard.cummings@verizon.net; web: www.competitionhobbysupplies.com



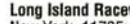
Fastraks, Hogsburg, New York 13655; Mark Castagnoy, (518) 358-3686; email: froghobb@northnet.org; web: www.fastraks.8m.com



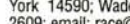
Hobby Zone Raceway, Ozone Park, New York 11417; Brian, Sean or Adam, (718)641-9001; email: moon-chaserwolf@aol.com



Lil Wheels Raceway, Oswego, New York 13126; Bill Meyer, 343-6566; email: lilwheelsraceway@hotmail.com; web: lilwheelsraceway.tsx.org



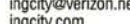
Long Island Raceway, Farmingdale, New York 11735; James, (516) 845-7223; web: www.raceway.com



Mayhem RC Raceway, Wolcott, New York 14590; Wade Rowley, 315-594-2609; email: race@mwuhobby.com; web: www.mwuhobby.com



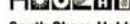
PRO Speedway, Cattaraugus, New York 14719; Marc Pritchard, (716) 257-3101



Racing City Hobbies & R/C Raceway, South Glens Falls, New York 12803; Ken Taylor, 518-792-7272; email: racingcity@verizon.net; web: www.racingcity.com



Radio Hill Raceway, Dundee, New York 14837; Bill or Greg, 607-243-8641 (Bill);



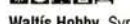
Rampage R/C & Hobbies, Hyde Park, New York 12538; Brian Walker, (845) 229-1379



South Shore Hobby & Raceway, Coram, New York 11727; Benny or Bonnie, 631-696-8500; email: ssh@southshorehobby.com; web: www.southshorehobby.com



Southern Tier Raceway, Owego, New York 13827; Anita Harding, (607) 687-5395



TARMAC Ultimate R/C Raceways, Poughkeepsie, New York 12603; Todd Plass, 845-342-5409(Todd); email: toddp@tarmacraceway.com; web: www.tarmacraceway.com



Waltis Hobby, Syracuse, New York 13209; Bruce, 315-453-2291; web: www.waltis-hobby.com



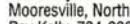
Willis Hobbies R/C Speedway, Mineola, New York 11501; Ken Ford, 516-746-3944; web: www.willishobbies.com



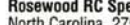
Chatham R/C Raceway, Bear Creek, North Carolina 27207; Dwight Fields, (919) 898-4518; email: crrcc@wave-net.net



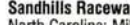
R.C.R. Speedway, Salisbury, North Carolina 28147; Ronnie Linker, (704) 637-2565



Race City Motor Speedway, Mooresville, North Carolina 28115; Ray Kelly, 704-660-FAST; email: Kellyrcms@cs.com; web: racecitymotorspeedway.com



Rosewood RC Speedway, Goldsboro, North Carolina 27530; Glenn Elam, 919-734-7754; email: gelam49@hotmail.com; web: www.glennshobby-corner.com



Sandhills Raceway, Southern Pines, North Carolina; Mike Russel, 910-245-4450; email: mrmrc@mindsping.com; web: www.sandhillsraceway.com



Southern R/C Motorsports Club, Shallotte, North Carolina 28459; Chris Dixon, (910) 754-6315; email: nohope@atmc.net



Xtreme Dirt RC Raceway & Xtreme On-Rd Raceway, Kannapolis, North Carolina 28083; Chris Lyerly-Xtreme Hobbies, Inc., 704-933-5321; email: thehobbyshop02@aol.com



OHIO

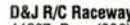
AK Hobby & Raceway, Cincinnati, Ohio 45211; Tim Tolle, (513) 661-7080; email: tim@akhobby.com; web: www.akhobby.com



American Ohio Sprint Car Association, Wickliffe, Ohio 44092; Gary Waldheim, 440-944-9966; web: www.aosca.8m.com



Black Swamp RC Car Club, Toledo, Ohio 43623; Riders Hobbies, 419-843-2931; email: ridersrcclub@webtv.net; web: www.blackswamprc.cjb.net



D&J R/C Raceway, Orrville, Ohio 44667; Don, (330) 682-4266



DeFosse Raceway, Ripley, Ohio; Greg DeFosse, (937) 377-2063



Hobbyland Raceway, Proctorville, Ohio 45669; Craig Harber, 740-886-0502or 740-8; email: pitroweracing@webtv.net; web: hobbylandraceway.homestead.com



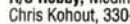
Mid Ohio Dirt Oval, Lexington, Ohio 44904; D&D Hobby Center, (419) 884-0001



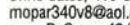
Nothing But Air R.C. Track, Logan, Ohio 43138; Gary Lloyd, 740-385-0288



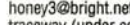
Ohio Valley OffRoad R/C Raceway, Jerusalem, Ohio 43747; Kevin Wilson, (740) 926-1738; email: consolo1st.net; web: www.ovor.8m.com



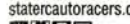
Outlaw Speedway, Lexington, Ohio; Eric Radio, 419-884-0001; email: kramerj@aol.com; web: rcdirtval.freesevers.com



R/C Hobby, Medina, Ohio 44256; Chris Kohout, 330-723-0255; email: kohouty@aol.com



RaCeway 42, Mansfield, Ohio 44905; Chris Cates, 419-589-4173; email: mopar340v8@aol.com; web: www.RaCeway42.itgo.com



River Rat Racing, Ripley, Ohio 45167; Jon Faris, 937-392-9298; email: honey3@bright.net; web: www.riverratraceway (under construction)



T.S.R.C.A.R., Hamilton, Ohio 45011; Dennis Young, (513) 367-5634; email: scaleracr@aol.com; web: www.tri-statercautoracers.com



TARCAR, Toledo, Ohio 43617; Bill Bridges, (419) 826-3859



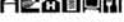
Ultra Racing R/C Hobby and Track, Hamilton, Ohio 45015; Ed Lewis, 513-863-7342; email: UltraRacing@aol.com; web: UltraRacing.com



Van Wert R/C Raceway, Van Wert, Ohio 45891; Mark Davis, (419) 232-2112

KEY TO SYMBOLS

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|--|-----------|--|--------------------|
| | Indoor | | Concrete |
| | Outdoor | | Asphalt |
| | Off-road | | Minis & Micros |
| | On-road | | On-site hobby shop |
| | Oval | | AC power |
| | Dirt oval | | Auto lap counting |
| | Carpet | | Food available |

Y-City Hobby & Speedway, Zanesville, Ohio 43701; Kevin McKenna, (740) 455-3025; email: Kevin@y-city-hobby.com; web: www.y-city-hobby.com


OKLAHOMA

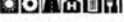
Action Hobbies, Tulsa, Oklahoma 74145; David Cole, (918) 663-8996; email: acthobby@aol.com


Action RC Speedway, Oklahoma City, Oklahoma 73135; Jerry Hawthorne, (405) 670-7770; email: ginnahawthorne@cox.net; web: www.action-rc.com


Adams Creek R/C Speedway, Broken Arrow, Oklahoma 74014; John Beighle, (918) 355-1416


Competition R/C, Oklahoma City, Oklahoma 73149; James or Louise Brown, (405) 634-0809; email: com-prc1@aol.com


Enid R/C Speedway, Enid, Oklahoma 73703; Darin Pendleton, (580) 554-9400; email: darin@enid.com; web: www.enidrcracing.com


HobbyTown USA--Norman OK, Norman, Oklahoma 73072; Todd Jensen, (405) 292-5850


Wings N Things Raceway, Tulsa, Oklahoma 74105; Heath Anderson, (918) 745-0007


OREGON

R/C Plus Hobbies Raceway, Salem, Oregon 97302; Ron Smith, (503) 364-9188; email: rcplus@rcplus.com; web: www.rcplus.com


Rose City Scale Racing, Portland, Oregon 97201; Dominic, 503-484-8887; email: dominic@rc-cars.com; web: www.rc-cars.com


PENNSYLVANIA

Altoona RC Raceway, Altoona, Pennsylvania 16602; Chuck or Doug Meyers, (814) 944-1200; email: altoonarc@yaho.com; web: www.altoonarcway.com


Bumps & Jumps RC Speedway, Etters, Pennsylvania 17139; Chris McKinney, 717-932-3000; email: bumpsandjumps-rc@comcast.net; web: http://www.bumpsandjumps.com


DC Ultra Trax, Warminster, Pennsylvania 18974; David Cowan, (215) 672-5200; web: www.jrcr-hobbies.com


Dirtburners Club sponsored by Schmidts Hobby, Windber, Pennsylvania 15963; Bruce Schmidt, (814) 266-4118; email: rcman@floodcity.net; web: www.rcman.net


Dreamboat Hobbies, Warren, Pennsylvania 16365; Louie Dussia, (814) 723-8052; email: dreamboat77@yahoo.com; web: www.dreamboat-hobbies.com


J&K Hobbies and Raceway, Jersey Shore, Pennsylvania 17740; Shawn Winter, 570-398-8171; email: rcmani-ac01@msn.com; web: www.JandKHobbies.com

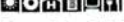

Kranzels R/C Raceway & Hobbies, Lemoyne, Pennsylvania 17043; David or Stuart Kranzel, (717) 737-7223; web: www.kranzelsrchoobbies.com


Little Plum R/C Hobbies, Lock Haven, Pennsylvania 17745; Larry Duck, (570) 769-1984


Marshall's R/C Raceway, Honesdale, Pennsylvania 18431; Bill or Dot Marshall, (570) 729-7458


McCullough's Offroad, Sarver, Pennsylvania 16055; Doug McCullough, (724) 352-0116; email: dmccull323@aol.com; web: www.mcculloughsoffroad.com


Newville RC Speedway & Hobbies, Newville, Pennsylvania 17241; Randy or Mike, 717-776-5568; email: newvillercspeedway@yahoo.com; web: www.newvillercspeedway.com


Pit Stop Hobbies-Mount Joy, PA, Mount Joy, Pennsylvania 17552, (717) 653-6222; email: pitstophobbies@pit-stop-hobbies.net; web: www.pitstop-hobbies.net


Racers Edge R/C Racing & Hobbies, Smethport, Pennsylvania 16749; Rick Morgan or Johna Simar, (814) 887-9256; email: postmaster@racers-edgesrc.com; web: www.racers-edgesrc.com


RB Motorsports & Hobby, Northumberland, Pennsylvania 17857; Rick Bunting, (570) 473-8711


RC Avenue Raceway, Bradenville, Pennsylvania 15650; Dan Vensel, 724-396-7628; email: mrmud@kisk.net

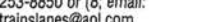

RC Outfitters, Hanover, Pennsylvania 17331; Chris Shaffer, (717) 633-9490; email: thestore@rcchoobbies.com; web: www.rcchoobbies.com


Riverside Raceway, Warren, Pennsylvania 16365; Jeff, (814) 723-4211


Staub Bros. R/C Speedway, Gettysburg, Pennsylvania 17325; Todd or Scott Staub, 717-334-8488; web: www.staubbrothers.com


The Raceway at River Junction, Beaver, Pennsylvania 15009; Sam or John, (724) 728-5571; email: river-jct@stargate.net


Thunder Road Raceway, Limerick, Pennsylvania 19468; Barry or John, 610.831.8898; email: xs1otgodx@aol.com; web: www.tow-barr.com


Trains & Lanes Raceway, Easton, Pennsylvania 18045; Jeff Setzer, (610) 253-8850 or (8) email: trainlanes@aol.com


TRP, Kingston, Pennsylvania 18704; Rob Yeager, 570-283-3066; email: rrcob99@aol.com

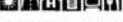

Washington RC Raceway, Washington, Pennsylvania 15301; Aaron Stimmell Jr., 724-228-8396

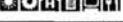

WillCam Raceway, Punxsutawney, Pennsylvania 15767; James Campbell, (814) 939-4251


PUERTO RICO

Bayamon R/C Park, Bayamon, Puerto Rico 00956; Damian Cruz & Javier Rivera, (787) 869-8092 & 401; email: damian@bayamonrcpark.com; web: www.bayamonrcpark.com


Hi-Speed C Raceways, San Juan, Puerto Rico 00926; Carlos Ortiz, (787) 283-0198; email: hispeed@hotmail.com; web: www.hispeedhobby.com


Mech Tech Touring Park, Caguas, Puerto Rico 00725; Humbert (Tito) Lizardi, (787) 739-1572; email: tilzar-di@hotmail.com


Tropical Raceway Track, Manati, Puerto Rico 00674; Hector Pabon/George Pabon, 787-785-9529; email: trophob@coqui.net; web: www.tropicalhobby.com


RHODE ISLAND

Insane Track, Cranston, Rhode Island 02907; Jose Jimenez, 401-467-8878; email: chevygo8@aol.com; web: www.insanehobbies.homestead.com


SK Hobbies Inc., Johnston, Rhode Island 02919; Slim or Keith, (401) 453-1440


SOUTH CAROLINA

Atomic Racers, Aiken, South Carolina 29803; John Felak, 803-642-0314; web: http://AtomicRacers.tripod.com


Carolina R/C Speedway, Easley, South Carolina 29640; David, 864-295-1209; email: cprahr@comcast.net; web: www.carolinarc.com


Darlington R/C Raceway at Hobbies & More, Darlington, South Carolina 29532; Jerry Pollard, (843) 393-0355; web: www.hobbiesnmore.com


DirtSlingeris, Hartsville, South Carolina 29550; Don Dietz, 843-383-0017; email: dshobbies@aol.com; web: www.dands-speedway.50megs.com


The Grove Racing Center, Rockhill, South Carolina 29730; Don Faris, (803) 327-4121; web: www.hobby-stop.com


SOUTH DAKOTA

Dakota Off-Road Racers, Aberdeen, South Dakota 57401; Kevin, 605-225-5223


Grassland Racers, Black Hawk, South Dakota 57718; Ryan Logan, (605) 787-5632


Triple B, Winner, South Dakota 57580; Broc Stout, (605) 842-2699


TENNESSEE

Hobby Town USA, Franklin, Tennessee 37067; Bobby Mills, (615) 771-7441; email: htut126@aol.com


Mid-South Racing Association, Memphis, Tennessee 38133; Michael Feliciano, 901-268-7969; email: michael.feliciano@expeditors.com; web: www.msra-racing.com


MSA R/C Racing, Crossville, Tennessee 38555; D.R. Findley, (931) 456-0027


Need For Speed Raceway R/C, Chattanooga, Tennessee 37415; Ronnie Cox, (423) 876-9019

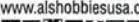

Robertson's R/C Raceway, Jackson, Tennessee 38301; Travis Robertson, 731-423-6984; email: RobertsonsRC@aol.com


SpeedZone Raceway Park, Athens, Tennessee 37303; Mike Henderson, 423-744-8358; email: speedzon@msn.com; web: www.speedzonraceway.com


W.O.W. Raceway, Beech Bluff, Tennessee 38313; Brad Jones, 731-427-1625; email: wowracer@charter.net; web: go.to/wowracing

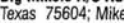

TEXAS

215 Speedway, Abilene, Texas 79602; Clyde Gardner, (915) 673-2351


Alis Hobbies, San Antonio, Texas 78227; Alfonso Robles, 210-645-1050; email: alishobbies@usa.com; web: www.alishobbiesusa.com


Austex RC, Austin, Texas 78757; Michael, 512-458-2324; web: www.austexrc.com


B&B R/C Hobbies, Big Spring, Texas 79720; Walter Bumbulis, (915) 263-1790; email: b&brchobbies@apex2000.net

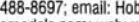

Big Mike's R/C Raceway, Longview, Texas 75604; Mike Sumrow, 903-297-7814


Drycreek Raceway, Greenville, Texas 75402; Micky Alphin, 903-527-5381; email: drycreek@pulse.net; web: www.pulse.net/drycreek


Finishline Raceway, Hurst, Texas 76053; Damon Darnall, (972) 404-0463; email: Finishline@ev1.net; web: http://users.ev1.net/~finishline/index.htm


Hal's Hobby Raceway, El Paso, Texas 79936, (915) 591-2213; web: www.halshobbywarehouse.com


Hobby Center Race Track, Houston, Texas 77598; Issac Ben-Ezra, 281-488-8697; email: Hobbycenter@issac-models.com; web: www.hobbycenter.cc


Hobbytown USA--San Antonio TX, San Antonio, Texas 78209; Clark, (210) 829-8697; fax: 829-8697


Indy R/C World, Garland, Texas 75041; Steve Webster, (972) 271-4844; fax: web: www.indyrcworld.net


Js Action R/C, Pasadena, Texas 77054; Jack Williams, 713-946-8888; email: jayactionrc.net; web: www.jsactionrc.com


K&M Racing, New Caney, Texas 77357; Brent Mahaffy, (281) 399-9777


M&M Hobby Center, Bellaire, Texas 77401; Meir Ben-Ezra, 713-661-7137; email: mandm@mhmhobby.com; web: www.mhmhobby.com


MBRC, Dallas, Texas 75093; Mike Battelle; email: info@mbrc-racing.com; web: www.mbrc-racing.com


Mike's Hobby Shop Superstore & Raceway, Carrollton, Texas 75006, 972-242-4930; email: mike@mikes hobbyshop.com; web: www.mikes hobbyshop.com


Reflex R/C, Houston, Texas 77055; Joseph Chen, (713) 464-4458; web: www.reflexrc.com


Thompson's RC Raceway, Lufkin, Texas 75901; Mark Thompson, (936) 637-0093


W.E.S. Hobby Race, Beaumont, Texas 77701; Marty Walker, (409) 839-4929


X-Treme Hobbies, Round Rock, Texas 78664; Jef Santos, (512) 310-0444 or (5) 310-0444


T&M Raceway R/C Drag Racing, Addison, Texas 75244; Marvin Jackson, (972) 416-0445; email: mjaackson@tmraceway.com; web: www.tmraceway.com


T&T R/C Cars, Plano, Texas 75024; Joe Sullivan, (972) 633-2470


The Rollcage, Greenville, Texas 75402; Guy Allen, (903) 883-0332; email: rollcage2000@therollcage.com; web: www.therollcage.com

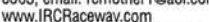

Thompsons RC Raceway, Lufkin, Texas 75901; Mark Thompson, (936) 637-0093


W.E.S. Hobby Race, Beaumont, Texas 77701; Marty Walker, (409) 839-4929


X-Treme Hobbies, Round Rock, Texas 78664; Jef Santos, (512) 310-0444 or (5) 310-0444


UTAH

Hobbs Stop Raceway, Riverdale, Utah; Todd Hamilton or Beazer Martin, (801) 622-0841

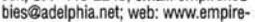

Intermountain R/C Raceway, Magna, Utah 84044; David Mott, 801-250-8303; email: rcmother1@aol.com; web: www.IRCRaceway.com


Outback Raceway, Ogden, Utah 84404; Steve Brown or Beazer Martin, 801-726-3458; email: Steve@rmrcr.com or Beazer@bibbs.com; web: www.rmrcr.com or www.beazershobbies.com

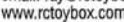

Vision Hobby, Orem, Utah 84057; Ken Rice, (801) 226-6226


VERMONT

Empire Hobbies Off-Road Raceway, Saint Albans, Vermont 05478; Scott or Jen, 877-446-2243; email: empirehobbies@adelphia.net; web: www.empirehobbies.com

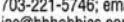

R/C Toy Box Hobbies & Tracks LLC, Saint Johnsbury, Vermont 05819; Raymond Richard, 802-748-1030; email: ray@rctoybox.com; web: www.rctoybox.com


VIRGINIA

Bradis Hobbies, Staunton, Virginia 22401; Brad, (540) 885-3642; email: brad@bradshobbies.com; web: www.bradshobbies.com


Brown Brothers Hobbies, Dumfries, Virginia 22026; Joe or Bob Brown, 703-221-5746; email: joe@bbhobbies.com; web: www.bbshobbies.com


Cooper's Radio Control Race Center Inc., Chatham, Virginia 24531; Norris L. Cooper, 434-724-4182; email: nlcooper@earthlink.net; web: www.coopersrc.com


Debbies RC World, Chesapeake, Virginia 23320; Les Modlin, 757-361.6681; email: Eric@debbiesrc-world.com; web: www.debbiesrc-world.com


Hampton Roads R/C Drag Club, Virginia Beach, Virginia 23452; Garry Nelson, 757-399-8645; email: Garry@gsdragracing.com; web: www.HRRDC.com


KCis Radio Control & Repair, Lynchburg, Virginia 24503; Curtis or Kim Wright, (804) 384-8596



Linville Hobbies Raceway, Linville, Virginia 22834; Jason or Jerry Shenk, (540)833-2222; email: linvillehobbies@juno.com; web: www.linvillehobbies.com



Olde Towne Hobby Shoppe, Manassas, Virginia 20110; Jeff Gough, (703) 369-1197; web: www.ManassasHobby.com



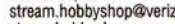
Roanoke R/C Club, Salem, Virginia 24153; Chad Trent, 540-765-8092; email: chad@dooleyprinting.com; web: roanokerc.cjb.net



Shamrock Raceway, Winchester, Virginia 22601; Charlie Greathouse, 540-678-8878; web: www.svpowersliders.org



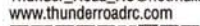
Stream Hobby Shop, Newport News, Virginia 23605; Rusty Kennedy, 757-591-0720; email: stream.hobbyshop@verizon.net; web: streamhobbyshop.com



The Tiltyard, Dayton, Virginia 22821; Homer, 540-828-3476; email: homer@tiltyard.com; web: www.tilt-yard.com



Thunder Road RC Speedway, Gordonsville, Virginia 22942; Ernie Padgett, Owner, 540-832-3318 (track); email: Thunder_Road_RC@hotmail.com; web: www.thunderroadrc.com



Tidewater R/C Speedway, Inc., Hampton, Virginia 23663; Jim Pike, Rob Marsette, Dave Pritchard, (757) 723-8927; email: zeeya31@hotmail.com



WASHINGTON

A-Main Raceway, Vancouver, Washington 98685; Monty Coleman, (360) 571-8404; web: www.ainmainraceway.com



Atomic Hobby, Issaquah, Washington 98027; Stanley Ng, (425) 391-8890; email: atomichobby@msn.com; web: atomichobby.com



Burien Toyota R/C, Seattle, Washington 98148; Ray Meek, (800) 654-6456



Cedardale Raceway, Mount Vernon, Washington 98273; Craig, 360-755-9464



Fantasy World Raceway, Tacoma, Washington 98408; Dave Kleinman, (253) 473-6223; email: sales@fantasy-worldhobbies.com; web: www.fantasy-worldhobbies.com



Four Season R/C Racing, Olympia, Washington 98506; Gary and Sharon Brown, (360) 491-2430



Hank Perry Raceway, Spokane, Washington 99023; Hal Hudson, 509-879-3503; email: halshudson@msn.com



HobbyTown USA--Lynnwood WA, Lynnwood, Washington 98037; Rich or Jamie, 425-774-0819; email: rhobbytown@aol.com



HobbyTown USA--Tacoma WA, Tacoma, Washington 98408; HobbyTown USA Shop, (253) 474-7787



Paradise Raceway and Hobbies, Spokane, Washington 99207; Mark, 509-483-1843; email: paradiserc@hotmail.com; web: www.websellers.com/paradise



Race City, Auburn, Washington 98002; Bruce, (253) 939-2515; email: auburn@pacifier.com



Rain City RC Raceway, Lynnwood, Washington 98036; Pete or Debbie Cartwright, 425-776-8241; email: info@raincityraceway.com; web: www.raincityraceway.com



Schmidts Auto Parts, Marysville, Washington 98271; Jon Fallia, (360) 653-8838; email: schmidtsrca@aol.com; web: www.schmidtsrca.com



Spokane Indoor Raceway, Spokane, Washington 99212; Brian Batch, 509-487-2122



Tacoma R/C Raceway, Tacoma, Washington 98409; Scott Brown, (253) 565-1935; web: www.tacomarc-raceway.com



West Coast Hobby & Raceway, Richland, Washington 99352; Darren Shank, (509) 375-4995



WEST VIRGINIA

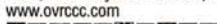
Burr Fab R.C. Raceway, West Union, West Virginia 26456; Mark Travis, 304-873-2487; email: burrshouse1@cs.com



Fulton's R/C Raceway, Wheeling, West Virginia 26003; James Fulton, (304) 233-5355



Mountwood Raceway, Vienna, West Virginia 26105; Tom Allen, 304-295-3234; email: ray@ovrcc.com; web: www.ovrcc.com



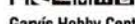
Quiet Dell Raceway, Fairmont, West Virginia 26554; Darris, (304) 366-1441; email: Tateracing@aol.com



WISCONSIN

ABC R/C Inc & Raceway, Waukesha, Wisconsin 53186; Dick Mathiesen,

262-542-1245; email: Help@abrcrcc-hobby.com; web: www.abrcrcc-hobby.com



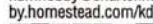
Gary's Hobby Center, Racine, Wisconsin 53403; Bill Phalen, 262-554-8884



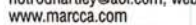
Hobbytown Oshkosh-The New Revolution Raceway, Oshkosh, Wisconsin 54901; Bill Magritz-Race Director, 920-426-1840; email: hobby807@sbglobal.net; web: www.hobbytownoshkosh.com



KDM Hobby & Raceway, Abbotsford, Wisconsin 54405; Kevin Michlig, 715-223-4414; email: kdmhobby@charter.net; web: kdmhobby.homestead.com/kdmhobby.html



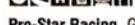
MARCCA Raceways, Poynette, Wisconsin 53955; Don Hartley, 608-243-1778; email: hotrodhartley@aol.com; web: www.marcca.com



Mid-West Tri-Clone/Tri-Clone Offroad, West Bend, Wisconsin 53095; Dave Hilpert, 262-334-0429 or 262-; email: mwtc@hnet.com; web: www.triclone.com



Oshkosh RC, Oshkosh, Wisconsin 54902; Bob, 920-426-1840; email: hobby807@sbglobal.net; web: www.hobbytownoshkosh.com



Pro-Star Racing, Green Bay, Wisconsin 54301; Chuck or Randy, Chuck-920-494-1233/R; web: www.prostarrracing.com



S&N's Trackside Hobbies and Raceway, Milwaukee, Wisconsin 53005; Scott Ernst, 262-783-4699; email: sernst@trackside.com; web: www.trackside.com



The Shorthalf Raceway, Eau Claire, Wisconsin 54701; Scott Schoettle, 715-838-8350; email: Scottschoettle@mcleodusa.net



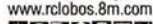
WYOMING

Xtreme Hobbies & Raceway, Gillette, Wyoming 82718; Krieg Balls, 307-682-6077; email: xtremehobby@collinscom.net

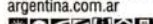


ARGENTINA

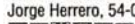
Circolo R/C Lobos, Lobos 7240; Rupert Bruce, 54-02227-422905; email: rclobos@yahoo.com; web: www.rclobos.8m.com



Circuit M.R. Models, Buenos Aires 1428; Maximiliano Roballos, 54 11 4557 1000, fax; email: info@kyosho-argentina.com.ar; web: www.kyosho-argentina.com.ar



Club A. Velez Sarsfield, Buenos Aires; Jorge Herrero, 54-01-658-5851



AUSTRIA

A.C.T. Model Car Racing Club, Wanniasa; Gary Davey, 61-6-2871411



A.C.T. Remote Control Car Club, Kambah; Rob Jorgensen, 61-2-6231-9925; email: bjorgo@industry.gov.au; web: www.actrcc.com



Aubry R/C Car Club, Aubry 2640; Ron Langman, 060-247-128



Brisbane Dirt Racing, Brisbane 4053; Jeff Chandler, 07 3355 7476, 041 8; email: bigfix@bigpond.net.au; web: www.users.bigpond.net.au/bigfix



Canberra Off Road Model Car Club, Queanbeyan 2902; Graham Brown, 02 6241 3070; email:

gbrown@webone.com.au; web: www.webone.com.au/~gbrown/mrccc/ndex.html



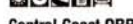
Canberra Off-Road Model Car Club, Narrabundah 2604; Graham Brown, 61-6-241-3070



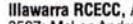
Carine R/C Model Car Club, Inc., Greenwood; Mitchell Davies, 0418 955 981; email: t3davies@iinet.net.au



Castle Hill Radio Control Off Road Car Club, Castle Hill 2754; Peter Ellis, 0412 257 353; email: chrccrcc@next-century.com.au; web: www2.nextcentury.com.au/chrccrcc



Central Coast ORRC, Bateau Bay 2261; Peter J. Knight, 61-43-693-698



Illawarra RCECC, Albion Park Rail 2527; Mel or Andrew, 042-714-683



Lakeside R/C Racing Car Club, Lansvale 2166; R. Bartolozzi, 62-2-907-9800



Melton Electric Circuit Car Association, Melton 3337; Arthur Joslin, 61-3-9747-8805



NSW Indoor R/C Raceway, Hurstville 2220; Anthony Lee or Walter Ly, 02-9585-8810



Penfield Park, Adelaide 5108; Trevor U'New South Walesorth, (618) 8289-5010



R.C. Speedway, Newcastle 2300; Andrew Dillon-Smith, 02-49265966



TFTF - Templestowe Flat Track Racers, Templestowe 3106; Nigel George, see website; email: tftf@imagefile.net; web: drive.to/tftf



The Bayside Raceway, Brisbane 4178; Nigel Bell, 07 3893 1864; email: mwr1@dingobluenet.au



Victorian Radio Control Drag Racing Association, Melbourne 3940; John de Tracy, +61 03 59867509; email: bjrn01@hotmail.com; web: www.ozemail.com.au/~john59/index.html



Wee Waas Offroad RC, Burren Junction 2386; Shane, 61-02-6796-1339



Wodonga R/C Car Club, Wodonga 3690; Paul Townsend, 02-6056-0706; email: townsend175@ozemail.com.au



AUSTRIA

RMC-Wien, Vienna A-1220; Herbert Holze/Martin Hrzak, +43-664-4730376



BARBADOS, WEST INDIES

R.O.A.R. (Radio Operated Auto Racing), St. Michael; Marva Clarke, (246) 427-3907



BELGIUM

ATR-Alka-Tele-Racing, Limburg; Alken, 0032-11-25-49-03



MBV-Kampenhout, Kampenhout B1910; Frank Mostrey, 0-16-65-75-18



Model Racing Club Oudenaarde (MRCO), 9700 Oudenaarde; Nicky Delmote, and fax: 32 55 30 36; email: mrcoc_racing@hotmail.com; web: mrcoc-racing.tripod.com



MRCZ, De Burg; Montie, 75-71-63

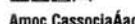


R.C.R., Retie 2470; A. Eelen, 32-14-379685



BRAZIL

AGARC Associação do Goiano de Automodelismo Radiocontrolado, Aparecida de Goiânia 74980-070; Zeca, Carol, Warner or Rodrigo, 062 9979 9009; email: zeca.net@terra.com.br



Amoc Cassociação do Modelismo B. Camborio, Bal, Camborio 88.330-000; Leo Cesar, (047) 366-0001



Brasília R/C Motor Circuit, Brasília 70000; Alexandre (Alex), 55-061-273-7205



C.A.A.R. Curitiba Associação de Automodelismo Radiocontrolado, Curitiba 82650-530; Ronaldo Assumpcao, 55-41-354-2804



Electric Car Club R/C Santos, Santos 11065-001; Estevam or Arnaldo, 55-013-232-2536



Hobby Center, Brasília 70.273, 061-242-0488



Hobby Planet Racing Club, Campinas 13091901; Daniel, Helio, Luciano, 019 258 2768



Jungle Drive, Rio de Janeiro 21940-490; Paulo Brito, (021) 396-0851 or (0 21) 396-0851



Off Roaders, Sao Paulo 05640; Waldir Ielpo, (055) 011-260-5628;



CANADA

C.A.R.C.A.R., Calgary; Kerry Nevatte, 403-630-8852; web: www.carcar.ca



Cactus Speedway, Kingsville N9Y 2V6; Bob Tanner, 519-326-3176; email: khunter@sparracers.com; web: www.sparracers.com



Cam R/C, Coquitlam V3E 1K9; Roger Brown, 604-945-3888



Circuit J.C., St. Polycarpe J0P 1X0; Jean Castellon, 450-265-3675



Circuit Teleguide ST Roch, ST Roch De L' Achigan J0K 3H0; Gerald Beauchamp, 450-588-4254; email: info@grcsr.com; web: www.grcsr.com



Copetown Raceway, Copetown; Adam Filipowicz; email: adamfilip@home.com; web: copetown-raceway.8k.com



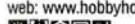
Dirt City RC, Albany, Oregon 97321; Doug Vertrees, (541) 791-1089; email: quicktemperrc@aol.com



Dynamic Hobbies, Nepean K2E7S4; Fred Zufelt, (613) 225-9634



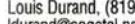
HobbyHobby P.L.R.C., Mississauga L5M 1K8; Tom Bakonyi, 905-858-7978; email: Info@hobbyhobby.com; web: www.hobbyhobby.com



Honda House Motor Speedway, Chatham N7M 1P9; John Elliot, (519) 354-5530



Importations Louis Durmand, Saint-Jean-Baptiste-de-Nicolet J3T 1E5; Louis Durand, (819) 293-6097; email: ldurand@sogetel.net; web: public.sogtel.net/ldurand/



Importations Louis Durmand, Saint-Jean-Baptiste-de-Nicolet J3T 1E5; Louis Durand, (819) 293-6097; email: ldurand@sogetel.net; web: public.sogtel.net/ldurand/



KEY TO SYMBOLS



Indoor



Outdoor



Off-road



On-road



On-site hobby shop



Oval



AC power

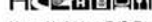
IROCC, Victoria V9B 5W9; Daryl Jones, (250) 478-8013; email: djoness@shaw.ca; web: http://www.irocc.ca



Johns Jump & Grind R/C Track, Waterville BOP 1V0; John Egan, 902-538-8920; email: john.egan@ns.symphatico.ca; web: www.jjagrc.com



J-T International Raceway, Napanee K7R 8A1; N. O'Neill, (613) 354-0099



Kays Hobbies R/C Raceway, Moorefield NOG 2K0; Doug Kay, 519-638-9990; email: dougk@golden.net; web: www.kayshobbies.place.cc



Leading Edge R/C Speedway, Kingston K7M 3Y5; Mike and Tony Daicar, 613-389-4878



Mid-Canada R/C Auto Racing, Winnipeg R2J 4E6; Boyd Chwartzacki, 204-444-4230; email: midcanadarc@mts.net; web: www.midcanadarcautoracing.com



Miniatures & Passions, Ste. Therese J7E 2B4; Gilles Lachance, (450) 979-7989



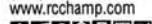
Mini-Z Hobby Shop, Markham L3R 2Z4; Brian Pong, (905) 940-0898; email: info@minizhobbyshop.com; web: www.minizhobbyshop.com



Prince George Radio Controlled Car Club, Prince George V2M 5R9; Doug Waller, 250-561-0035



R/C Champ Raceway, Scarborough M1H 3A4; Ben, Matthew or Louie, (416) 289-8717; web: www.rcchamp.com



R/C Fanatic de la Capitale, Charlesbourg G1G 3Y4; Marc Page (Club President), 418-265-2678; email: info@rcfanatic.com; web: www.rcfanatic.com



Recreation R/C Raceway, Prince George; Doug Waller, (604) 561-0035



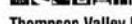
Steeletown Speedway, Binbrook L0R 1C0; Trevor Harrison, 905-692-3407 (ask for); email: the_prodigy@zdnetwork.com; web: www.geocities.com/s_speedway



Sudbury Organized Auto Racing, Val Caron P3E 1B6; Brad Peacock, 705-897-1435 (Brad); email: soarsudbury1@hotmail.com; web: www.sudburyrc.no-ip.com



The All New R.C. World, Hamilton L0R 1W0; Dave, Larry or Brian, (905) 765-2301 or (9



Thompson Valley R/C Raceway, Kamloops V2E 2K7; Brent Wende, (250) 372-2917; email: tvrcrc@shaw.ca



Vancouver R/C Road Racers, Coquitlam V3E 1K9; Roger Brown, (604) 945-3888



CHILE

Nico Prohens Off/On Roaders, Ovalle 1; Nicolas Prohens, (56) 53-711579; email: nprohens@entelchile.net; web: 38939070.home.icq.com/



OFF/ON ROADERS, Santiago 1; Mauricio Wetter Ferrer, (56) 09-8404174; email: mwetter@entelchile.net; web: 38939070.home.icq.com/



COLOMBIA

Club De Automodelismo Colombiano, Santafé De Bogotá D.C.; Jorge

Delgado, 1-6130588



Garoso Raceway, Cucuta; Gabriel Rodriguez, 975-751892



COSTA RICA

Club de Automodelismo RC10 Costa Rica, San Jose; Osvaldo Averhoff A, (506) 2862353; email: nitrocr@hotmail.com



Hobbymania, Hispanidad San Pedro; Randall Jimenez, 506-280-9078; email: hobbymaniasstore@hotmail.com; web: www.hobbymanias.com



CYPRUS

Racing Model Club, Nicosia; Andrea Sotiriou, 493186; fax 493229



DENMARK

Brøndby Motor Club, Brøndby 2605; Søren Boy Holst, 45-36-472-462



Holstebro R/C Buggy Club, Holstebro 2600; Michael Brusholt, 45-97-412-734



Klub 144 Raceway, Lyngby 2800; Henrik Carstensen, 45-42-88-3691



Rainbow Raceway, Copenhagen 2600; P. Christiansen, 45-52-848-504

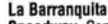


Thor Minirace Odense, Odense N° 5240; Ulrich Rasmussen, 45-65-303-707

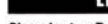


DOMINICAN REPUBLIC

Adoca R/C Speedway, Santo Domingo, (809) 220-5266



La Barranquita R/C International Speedway, Santiago, (809) 582-2303

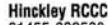


ENGLAND

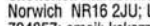
Chessington Radio Car Club, Worcester Park; Ian Spiller, 0252-20657



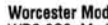
Hampshire Racing Center, Basingstoke; Tony Eudola, 44-1276-61402



Hinckley RCCC, Hinckley; Bruce, 01455-890580



Snetterton Market Model Car Club, Norwich NR16 2JU; Lee Shore, 01760 724857; email: kekezza@fsmail.net; web: www.wheelspins.co.uk

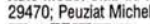


Worcester Model Car Club, St. John's WR2 6Q9; Mr. Hardy



FRANCE

Auto Electron, Limoges 87000; M. Boudoul, 55 062763



Auto Model Club de l'Iouest, Lojehet 29470; Peuziat Michel, 98071764



Craze Roncq, Mons el Baroeul; Michael Hondelky, 33-20042755



CSRM, Lyon 69009; Pierre-Yves Monfroy, 06 78880852



Lorgies Boides, Lorgies 62840; Hourdequin Sabine



GERMANY

Dreykorn Raceway, Lauf 91207; Hermann Hensel, 09123-81457



MAC Zweibruecken, Hueffler 66909; Matthew Bailey, 011-49-6384-1388; email: matthew_w_bailey@hotmail.com; web: www.geocities.com/matthew_w_bailey



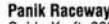
MC Koln, Worringen 50769; Ralf Habel, 02733-477493



Mini Car Club Dortmund, Dortmund 4600; Roland Schwan, 0231/213609



Oberhausen-Altstaden, Oberhausen 46099; Josef Holl, 0208-403676



Panik Raceway, Troisdorf 53844; Guido Kraft, 0224-400259



HONDURAS

Autodromo Accion, San Pedro Sula; Colonia Rivera Hernandez; Eduardo Hondal, (504) 52-2061



HONG KONG

H.K.R.C. Model Car Racing Club, Hong Kong; Alex Chan, (852) 659-2822

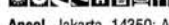


Kingsville Buggy Arena, Shatin; Pak Yeung, (852) 607-0828



INDONESIA

Abadi Circuit, Bandung 40141; Adi Darmawan, 62-22-2021084; email: darmawaa@bdg.centrin.net.id



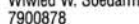
Ancol, Jakarta 14350; Andre Supryana, 62 21 6506040; email: andre@cbn.net.id; web: www.auvis.com/ja



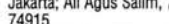
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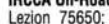


Pondok Cabe Circuit, J.L. Kunir No. 83, Jakarta; Ali Agus Salim, 7403568-9; fax 74915



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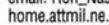


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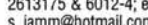
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MALAYSIA

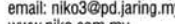
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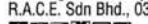
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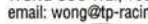
Niko Sales & Service Centre, Johor Bahru; Niko Cheng, (607) 234-3615; email: niko3@pd.jaring.my; web: www.niko.com.my



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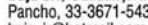


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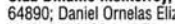
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Baja JR, Guadalajara 45000; Memo, Pancho, 33-3671-5432/33-3832; email: baja_jr@hotmail.com



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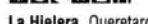
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La Hielera, Queretaro 76160; Jorge Morelos Rabell, 42-12-15-25



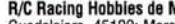
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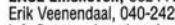


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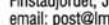
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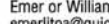
Boyet R/C Hobby Shop, Rizal; Jose Chua, 721-2555



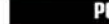
Philippine F1/Touring Club, Quezon City 1156; Raymond Aguilar/Ron Villafior, 896-64-15/23-30-08



Philippine R/C Association, Manila; Ronald/Manny Villafior, 23-30-08



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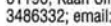


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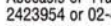


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- | | |
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| Oval | AC power |
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| Carpet | Food available |

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212, 213
acehardwarehobbies.com

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Inc. 30, 109
acehobby.com

Acer Racing 207
acerracing.com

Airtronics 133
airtronics.net

B&B Software 215
bnautoscore.com

Bruckner Hobbies 178
brucknerhobbies.com

Castle Creations 144,
145
castlecreations.com

CEN/Genka Trading Corp.
72, 73
cenracing.com

Custom Works 156
customworksrc.com

Deans Connectors 226
wsdeans.com

DuBro Racing 210
dubro.com

DuraTrax 67, 87, 111,
141, 165
duratrax.com

Dynamite 236
dynamiterc.com

ERI Associates 180

Extreme Standz 200
extremestandz.com

FHS/Red Max Fuels 233
members.aol.com/fhsoil

First Hobby 207
firsthobby.com

Fusion Batteries 86
fusionbatteries.com

Fusion Motorsports 164
fusionmotorsports.com

Futaba 155
futaba-rc.com

General Silicones Group
45, 123
gsracing.com

Golden Horizons 166
ghhobby.com

Gorilla Maxx 207
gorillamaxx.com

Hardcore Racing
Equipment 216
racinghardcore.com

Hitec/RCD Inc. 49
hitecrdc.com

Hobbico 176

Hobby Etc. Inc. 246
hobbyetc.com

Hobby People 174, 222,
223
hobbypeople.net

HPI Racing 88, 89, 142,
143, 167
hpiracing.com

HyperHobbies Inc. 224
roaddome.com

Imex Model Co. 175
imexrc.com

JR Products 32
jrradios.com

K&S Engineering 245
ksmetals.com

Kyosho 36, 37, 50, 51
kyoshoamerica.com

Lunsford Racing 229
lunsfordracing.com

Megatech 180, 228
megatech.com

Maximizer Products 233
maximizerproducts.com

Model Rectifier Corp.
(MRC) 17
modelrectifier.com

Mugen-Seiki 232
mugenracing.com

N-Ternational Nitro 224
nternationalnitro.com

New Era Models 206
neweramodels.com

NitroHouse.com 162

Nomadio 126, 127
nomadio.net

Novak Electronics 25, 53
teamnovak.com

NYC Hobbies 233
nychobbies.com

O.S. Engines 225
osengines.com

OFNA Racing 58, 59, 61,
63, 74, 75, 100, 101,
124, 125, 211
ofna.com

Parma/PSE 177
parmapse.com

Peak Racing Products
121
peakmotors.com

Performance Devices Inc.
215
performancedevices.com

Power Racing Products
146, 147
powerracingrc.com

Pro-Line USA 6, 7, 8, 9,
248, 250, C3
prolineracing.com

Racer's Edge 245

RC Monster Trucks 235

RC Solutions 245
rc-solutions.com

RCStore.com 244

R/C Car Kings 214

RC Guy 215

RPM 154
rpmrcproducts.com

Robinson Racing
Products 68, 69, 70, 71
robinsonracing.com

Schumacher USA 153
racing-cars.com

SMC Racing 230
smc-racing.com

Stormer Hobbies 202,
203, 204, 205
stormerhobbies.com

Tamiya America Inc. 14,
15, 90, 91
tamiyausa.com

Team Associated 12, 13,
22, 23, 34, 35, 47, 54,
55, 56, 57, 102, 103,
114, 115, 131, 157
teamassociated.com

Team Losi 20, 21, 76,
77
teamlosi.com

Team Orion 29, 31,
33, 168
teamorion.com

Tempgum.com 215
TNT Mods 221
tntmods.com

Tower Hobbies 181, 190,
191, 192, 193, 194,
195, 196, 197
towerhobbies.com

Traxxas Corp.
traxxas.com 19, 64, 65,
134, 135

Trinity Products Inc. C2,
3, 4, 5, 10, 11, 26, 27,
28, 38, 40, 41, 151,
189, C4
teamtrinity.com

TSAIS/RCHUB 220
rchub.com

Vantage Racing 179
vantageracing.com

Venom Racing 132, 234
venom-racing.com

Werks Racing 112, 113
werksracing.com

XRAY 171, 186, 187,
188
teamxray.com

XTM 43, 85, 97
xtm.globalhobby.com

XXX-Main Racing Inc.
201
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Yokomo Ltd. 152
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COOL. CAR. BRAVE KID!

I have been an avid RC enthusiast for the last 15 years and thought it was time to introduce my 2-year-old son Drew to the hobby. But I wanted to show it to him through a different perspective—from inside the car. I built him a ride-in, electric-powered RC car. It is based on the fiberglass body of a 1936 Ford that I picked up at a swap meet a few years ago. I repaired the body and painted it with 2-stage automotive paint. The frame was built from 3/4-inch mig-welded square steel tube. I used 2 Hitec 1/4-scale steering servos, another 1/4-scale servo to operate the 5-inch mechanical disc brake and a standard servo to operate the sequential speed controller. Power is handled by a 24V, 280W electric motor borrowed from an electric scooter. A 5-cell, sub-C receiver pack powers the electronic gear, including a Dynamite fail-safe. The car has modified go-kart rear wheels with 5-inch slicks and modified Radio Flyer front wheels. Steering is handled by the modified go-kart spindles and a scratch-built linkage. The interior was framed in plywood, padded and covered in tweed (for that hot-rod look). The car is geared for an approximate top speed of 10mph, and so far, it has been able to run for almost two hours on one charge. I can't get my son out of it! He tells everyone about his hot-rod! It's a big hit at all the local car shows, and my most common phrase on those days is, "No; it's not for sale." I would love to see this in the pages of your great magazine; I hope you like it enough to include it. Please let me know if you need other pictures—I have plenty!

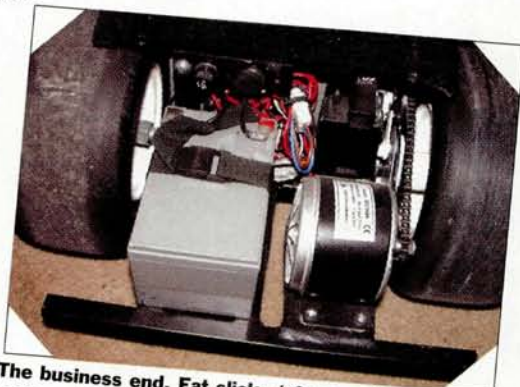
Thank you,
Jeff Lorenzo
Burlingame, CA



The frame is made of square steel tube, so you know it's solid. The steering gear is go-kart stuff, and a pair of Hitec 1/4-scale servos swings the linkages.



For a homebuilt project, this thing looks pretty factory. The interior "bucket" is padded plywood upholstered with tweed.



The business end. Fat slicks (of course) and a scooter motor with chain drive propel Drew's hot-rod.

